Official Journal of the

INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION

OCT 27 1948

MEDICAL LIBRARY

Postgraduate Medicine

VOLUME 4, Number 4 OCTOBER 1948

FOREIGN BODIES IN AIR AND FOOD PASSAGES
Chevalier L. Jackson, M. D.

DISSECTING ANEURYSM OF AORTA
James E. Paullin, M.D. and *David F. James*, M.D.

Diagnostic Clinics

DIAGNOSIS AND TREATMENT OF TULAREMIA
Lee Foshay, M. D.

SUBARACHNOID HEMORRHAGE AND INTRACRANIAL ANEURYSM
Henry G. Schwartz, M. D.

THE UNKNOWN DIABETIC
Elliot P. Joslin, M. D.

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF ARTHRITIS
Ralph A. Kinsella, M. D.

Scientific Exhibit

CONGENITAL ANOMALIES OF THE HEART AND GREAT VESSELS, Part II
T. J. DRY, J. E. EDWARDS, R. L. PARKER, H. B. BURCHELL, H. M. ROGERS, AND A. H. BULBULIAN

ASSEMBLY PROGRAM AND TECHNICAL EXHIBITS

SPECIAL CLEVELAND ASSEMBLY ISSUE

COMPLETE TABLE OF CONTENTS ON PAGE 5

International Assembly—Public Auditorium, Cleveland, Ohio, November 9 to 12, 1948, 33rd Year

At the Cleveland Session

of The INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION

Saunders Books will be on display at Spaces 42 and 43. Your inspection of our entire line is invited.

Turn to Pages 6 and 7 for *Saunders Announcement* of NEW BOOKS and NEW EDITIONS

(Advertisement)

NOW! Tyrothricin
and
Benzocaine
in a new, antibiotic throat lozenge!

Tyrozets®

ANTIBIOTIC-ANESTHETIC
THROAT LOZENGES

Tyrothricin, potent antibacterial extract of Dubos' bacillus, and widely considered the topical antibiotic of choice, is the principal ingredient of TYROZETS Lozenges, Sharp & Dohme's remarkable new preparation for prophylaxis and treatment of gram-positive throat and mouth infections, and for post-surgical care of the pharynx.

Tyrothricin is penetrating, nontoxic when applied locally, and highly effective against such gram-positive organisms as Corynebacterium diphtheriae, pneumococci, streptococci and staphylococci frequently responsible for infections of throat and mouth.

Each TYROZETS lozenge contains tyrothricin, 1 mg., and 5 mg. of soothing, analgesic benzocaine.

TYROZETS Antibiotic-Anesthetic Throat Lozenges rapidly relieve the pain and discomfort of infected or irritated throats, promptly destroying gram-positive pathogens. These new, nontoxic, pleasantly flavored Sharp & Dohme lozenges are indicated for treatment of gram-positive throat and mouth infections, sore throats, and especially following tonsillectomies and pharyngeal surgery. They are also effective for prophylactic throat protection when colds are prevalent.

TYROZETS Antibiotic-Anesthetic Throat Lozenges are packed in moisture-proof, plastic-stoppered tubes of 12.

SHARP & DOHME **TYROZETS**

POSTGRADUATE MEDICINE

OFFICIAL JOURNAL OF THE INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA—ORGANIZED IN 1915

OCTOBER, 1948 VOL. IV, NO. IV

Table of Contents

Special Articles

FOREIGN BODIES IN AIR AND FOOD PASSAGES.
Chevalier L. Jackson, M.D. . . . 281

DISSECTING ANEURYSM OF AORTA.
James E. Paullin, M.D., and David F. James, M.D. . . . 291

BENADRYL: By Injection for Relief of Allergic Symptoms.
Samuel J. Taub, M.D. . . . 300

Diagnostic Clinics

THE UNKNOWN DIABETIC.
Elliott P. Joslin, M.D. . . . 302

SUBARACHNOID HEMORRHAGE AND INTRACRANIAL ANEURYSM.
Henry G. Schwartz, M.D. . . . 307

DIAGNOSIS AND TREATMENT OF TULAREMIA.
Lee Foshay, M.D. . . . 315

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF ARTHRITIS.
Ralph A. Kinsella, M.D. . . . 322

Scientific Exhibit

CONGENITAL ANOMALIES OF THE HEART AND GREAT VESSELS, Part II.
T. J. Dry, J. E. Edwards, R. L. Parker, H. B. Burchell, H. M. Rogers, and A. H. Bulbulian . . . 327

Departments

THE MEDICAL BOOKMAN. *Diagnosis in Gynaecology* . . . 361
MEN OF MEDICINE. *Willard Bartlett*, M.D. . . . 363
EDITORIALS. *Etiology of Rheumatism • Doctors' Diseases* . . . 370
ASSOCIATION NOTES . . . 372
PROGRAM: CLEVELAND ASSEMBLY . . . 374
TECHNICAL EXHIBITS: CLEVELAND ASSEMBLY . . . 378
NEW DRUGS AND INSTRUMENTS . . . 393
LEAVES FROM A DOCTOR'S DIARY. Maurice Chideckel, M.D. . . . 394

At Cleveland . . .

Saunders cordially invites you to visit its exhibit (Spaces 42 & 43) where, for your convenience, the new books and new editions listed on this page and the one opposite will be displayed along with the many other important books in the Saunders line.

A. M. A. Interns' Manual—Prepared by Councils and Bureaus of the American Medical Association. Compiled and Edited in the office of the Council on Pharmacy and Chemistry. 198 pages. *New—Ready Soon*

Long's A-B-C's of Sulfonamide and Antibiotic Therapy—By PERRIN H. LONG, M.D., F.R.C.P., The Johns Hopkins University School of Medicine. 231 pages. $3.50. *New*

Cutting's Manual of Therapeutics—By WINDSOR C. CUTTING, M.D., Stanford University School of Medicine. 712 pages, illustrated. $5.00. *New (2nd) Edition*

Bastedo's Pharmacology, Therapeutics and Prescription Writing—By WALTER A. BASTEDO, M.D., formerly Columbia University. 840 pages, illustrated. $8.50. *New (5th) Edition*

Willius & Dry's History of the Heart and the Circulation—By FREDRICK A. WILLIUS, M.D., and THOMAS J. DRY, M.B., The Mayo Clinic. 456 pages, illustrated. $8.00. *New*

Brams' Treatment of Heart Disease—By WILLIAM A. BRAMS, M.D., Northwestern University Medical School. 195 pages, illustrated. $3.50. *New*

Kinsey, Pomeroy & Martin's Sexual Behavior in the Human Male—By ALFRED C. KINSEY, WARDELL B. POMEROY, and CLYDE E. MARTIN, Indiana University. 804 pages, 173 charts, 159 tables. $6.50. *New*

De Gowin, Hardin and Alsever's Blood Transfusion—By ELMER L. DE GOWIN, M.D., State University of Iowa, ROBERT C. HARDIN, M.D., State University of Iowa, and JOHN B. ALSEVER, M.D., U. S. Public Health Service. About 586 pages, with 180 illustrations. *New—Ready Soon*

Beckman's Treatment—By HARRY BECKMAN, M.D., Marquette University School of Medicine. 1129 pages. $11.50. *New (6th) Edition*

Thorner's Psychiatry in General Practice—By MELVIN W. THORNER, M.D., D.Sc., Graduate School of Medicine, University of Pennsylvania. About 624 pages, illustrated. *New—Ready Soon*

Noyes' Modern Clinical Psychiatry—By ARTHUR P. NOYES, M.D., Norristown State Hospital, Pa. 525 pages, $6.00. *New (3rd) Edition*

Wechsler's Clinical Neurology—By ISRAEL S. WECHSLER, M.D., Columbia University, New York. 829 pages, 162 illustrations. $8.50. *New (6th) Edition*

Lyons and Woodhall's Atlas of Peripheral Nerve Injuries—By WILLIAM R. LYONS, Ph.D., University of California Medical School; and BARNES WOODHALL, M.D., Duke University Medical School. About 350 pages, 10" x 12¾", with hundreds of illustrations, some in color. *New—Ready Soon*

TO ORDER, USE FORM ON PAGE OPPOSITE →

Saunders Books

Foreign Bodies in Air and Food Passages

CHEVALIER L. JACKSON*

TEMPLE UNIVERSITY SCHOOL OF MEDICINE, PHILADELPHIA

My subject is "Foreign Bodies in the Air and Food Passages," but first I would like to make a few introductory remarks with regard to bronchoscopy and esophagoscopy and broncho-esophagology as it is today.

Peroral endoscopy was developed primarily by otolaryngologists for the removal of foreign bodies. Today special training in these procedures, and in "broncho-esophagology" properly constitutes a part of the education of the thoracic surgeon, the phthisiologist, the anesthesiologist, and the gastroenterologist. Bronchial obstruction, its mechanisms and effects, has come to be understood largely through experience with foreign bodies, the ones opaque to the x-ray first, and then the nonopaque ones.

The diagnostic importance of the wheeze indicative of a by-pass valve obstruction, of obstructive emphysema due to a check valve type of obstruction, and obstructive atelectasis due to a stop valve type of obstruction, have come to be generally recognized, and these evidences of bronchial obstruction always call for diagnostic bronchoscopy.

*Professor of Laryngology and Broncho-esophagology, Temple University School of Medicine, Philadelphia.

Presented before the meeting of the Interstate Postgraduate Medical Association of North America, St. Louis, Missouri, October 14 to 17, 1947.

Bronchial obstruction is an etiologic and perpetuating factor in postoperative atelectasis, in pulmonary abscess, bronchiectasis, and empyema. Bronchoscopy affords the means of its early and accurate diagnosis, as well as, very often, the means of its prevention or cure.

Signs of bronchial obstruction constitute the earliest manifestations of bronchial cancer, and early bronchoscopic biopsy conduces to cure by means of early resection. Benign tumors can be diagnosed and removed by means of the bronchoscope.

Modern diagnosis of diseases of the esophagus and stomach is dependent very largely on esophagoscopy and gastroscopy, and the gastroenterologist of today must master the technic of peroral endoscopy. Largely through experience with bronchoscopy and esophagoscopy for foreign bodies, broncho-esophagology has developed as a new branch of medicine, and knowledge of it is essential in the training of the internist, the thoracic surgeon, the phthisiologist, the anesthesiologist and gastroenterologist, as well as the otolaryngologist.

Though the work with foreign bodies these days constitutes a small percentage of the work of any broncho-esophagologist, it still is a vitally important and certainly a very interesting part of his work.

ETIOLOGY

Study of the etiology of foreign bodies has shown us that carelessness of one kind or another is the cause in almost 90 per cent of the cases—carelessness in the preparation of food, carelessness in eating, carelessness in looking after infants and young children.

Age is an important etiologic factor because 80 per cent of patients with foreign bodies are under 15 years of age. Artificial dentures are important in two ways: first, because they may occur as foreign bodies themselves when not properly adjusted; and secondly, they are an important etiologic factor in the swallowing of foreign bodies such as bones or chips of china or other foreign material in food that is not detected in the mouth because the patient wears a denture which prevents the foreign body from being felt as it otherwise would be.

Coughing, laughing, crying, vomiting, and fainting are all contributory factors in these accidents. Dental and surgical accidents have accounted for a few, resulting in the inhalation or swallowing of some dental or surgical instrument. And finally, insanity or attempted suicide has been a factor in a few cases.

PROPHYLAXIS

We can prevent many of these accidents by more care: (1) more care in the preparation of food and instruction of those who have charge of the preparation of food in observation of reasonable precaution; (2) care in the mastication of food, especially by those who wear artificial dentures; (3) care in the training of children not to put inedible objects in the mouth, which is perhaps easier to advise than to carry out, but nevertheless one can try, and care not to give peanuts or peanut candy to babies under 2 years of age who cannot chew; finally, avoidance of setting a bad example to children by putting inedible objects in one's own mouth, and (4) care on the part of dentists and surgeons who work about the mouth not to allow small objects to be inhaled or swallowed.

SYMPTOMATOLOGY AND DIAGNOSIS

The initial symptoms of a foreign body accident, regardless of where the foreign body eventually lodges, are choking, gagging, coughing, wheezing, and very important, as has been pointed out a number of times before, is the *symptomless interval* that generally follows these initial symptoms.

The localizing symptoms, if the foreign body is in the *larynx,* may be hoarseness, croupy cough, dysphonia, wheezing, dyspnea and cyanosis in the case of obstructive objects.

In *tracheal* foreign bodies the principal symptoms are an asthmatoid wheeze, cough, or a slapping sound produced by a freely moving tracheal foreign body.

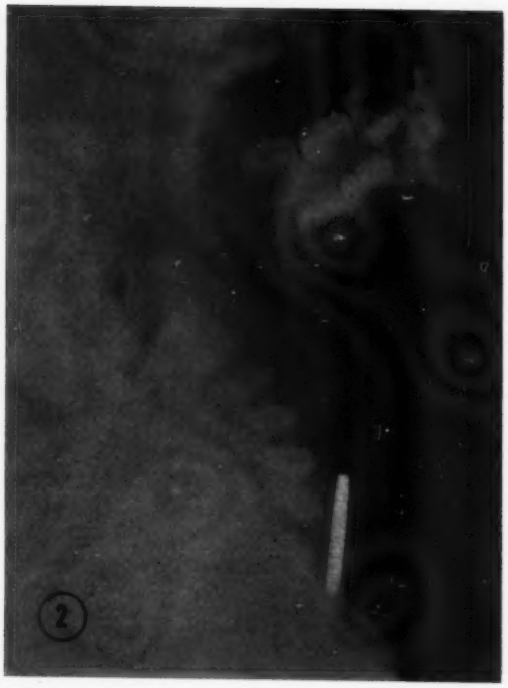
Bronchial foreign bodies produce cough, blood-streaked sputum, and wheezing in many cases. If they are nonobstructive, however, they may give few or no symptoms for a long period of time. If the foreign body is obstructive, a wheeze is generally noted, and, depending upon the degree of obstruction, the physical and x-ray signs of obstructive emphysema and atelectasis. Vegetable foreign bodies give rise to violent inflammatory reaction in children, with fever and very often croupy cough due to the subglottic swelling, and slightly less severe reaction in adults.

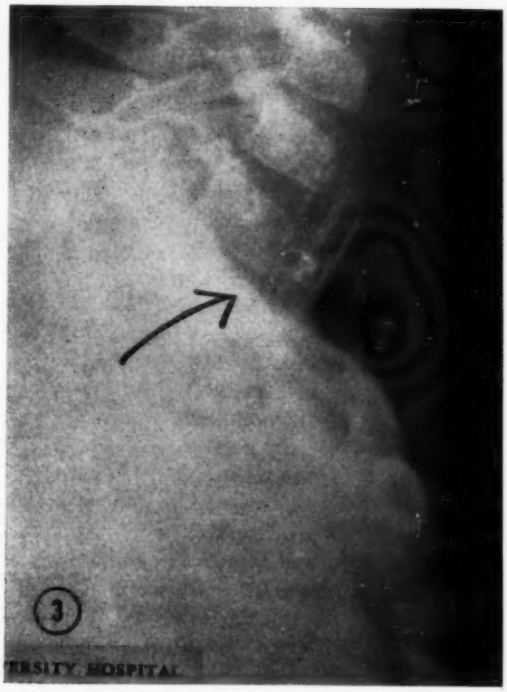
Esophageal foreign bodies may give a subjective sensation of the lodgment of the foreign body, or give difficulty in swallowing, pain in swallowing, sticking sensation, or may give very slight symptoms. In the case of gastric foreign bodies there are generally no symptoms at all.

To summarize diagnosis, *laryngeal* foreign bodies are diagnosed by x-ray studies and by the examination of the larynx with the mirror or the direct laryngoscope, or both. In the case of children one cannot see the larynx with the mirror, so the direct laryngoscope must be used for the laryngoscopic examination.

In *tracheal* foreign bodies the diagnosis is made on the basis of the typical symptoms mentioned above and x-ray examination, which should always be done whether or not the sus-

1


2


3
TERSITY HOSPITAL

4

pected foreign body is opaque to the x-ray.

In *bronchial* foreign bodies, a careful history is important as the first step in diagnosis. Physical signs often present conclusive evidence of the presence of a foreign body. Percussion and auscultation are of the greatest value in demonstrating bronchial obstruction. The roentgen ray is the most valuable diagnostic means whether or not the foreign body is radiopaque, but the roentgen ray may be negative and the physical signs positive. The roentgen examination should include all the structures from nasopharynx to the tuberosities of the ischia. A lateral roentgenogram should never be omitted, and neither should the preliminary fluoroscopic examination. If possible, films should be taken both on full inspiration and full expiration, because in this way only is a graphic record made of the typical appearances of obstructive atelectasis and obstructive emphysema.

In *esophageal* foreign bodies the diagnosis is made chiefly by the roentgen ray with the use of an opaque mixture if the foreign body is nonopaque. The diagnosis of a nonopaque foreign body in the stomach cannot be made by any method except examination with the flexible gastroscope. Opaque foreign bodies, of course, are diagnosed by the x-ray.

TREATMENT

Fifty years ago, though some surgeons had reported very skillful operations for the removal of foreign bodies, in general the mortality rate was very high, probably as high as 75 per cent. Today the removal of foreign bodies from the air or food passages is carried out by means of the direct laryngoscope, the bronchoscope, or the esophagoscope, and the mortality should be less than one per cent. Endoscopic removal of foreign bodies requires study of the mechanical problem presented in the particular case.

Bones are the commonest objects occurring as foreign bodies. That is not surprising when we think how commonly they occur in food, but the incidence of bones as foreign bodies can be very much reduced if the public is warned of the risk of this accident.

Most of the little *spicules of bone* occur in the lower pole of the tonsils and the base of the tongue or in the valleculae, but the other bones lodge down in the cervical esophagus. One of the commonest bones is the *triangular part of the sternum of the chicken.*

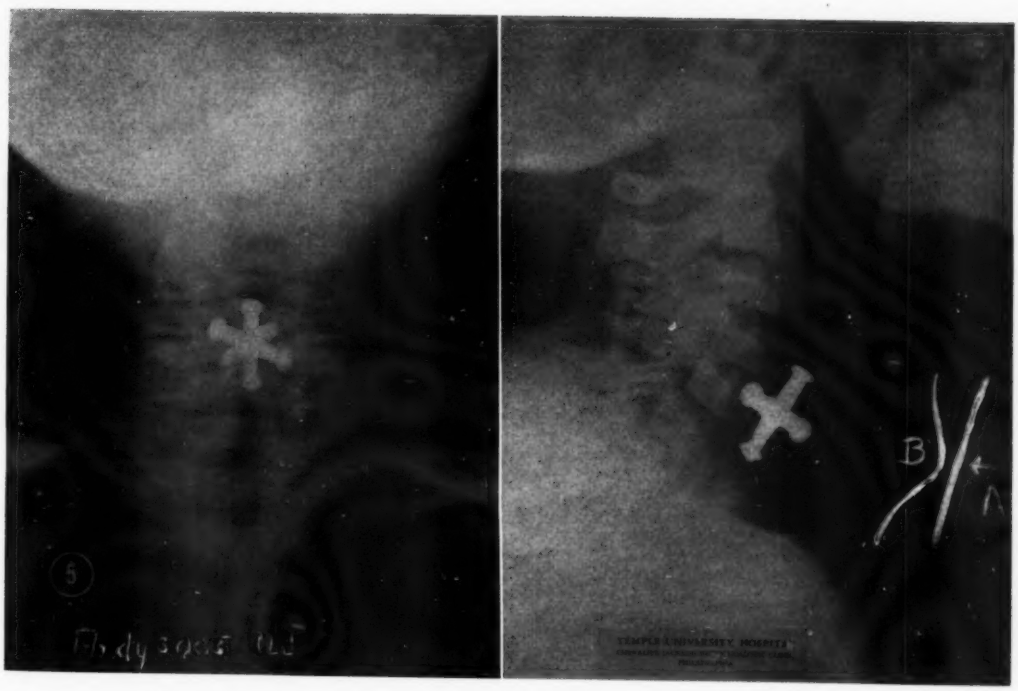
A good x-ray, one taken with the proper technic, will almost always show conclusively a bone in the esophagus. Some years ago x-rays were not that good and we could not depend on them as much as we do now. Almost any bone now will show in the x-ray. The diagnosis in some cases is a little more difficult even with the x-ray showing the bone, because there may be confusion with the ossification in the laryngeal cartilage. Figure 1 shows a bone lodged right behind the cricoid cartilage, but it is a foreign body and not the ossification in the cricoid.

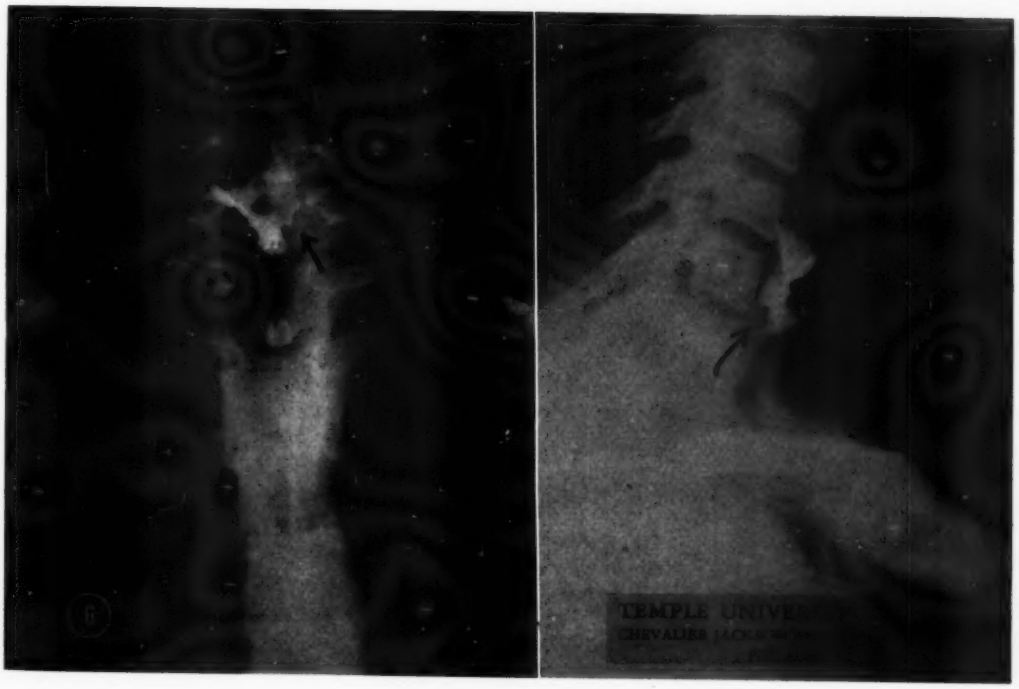
Another common foreign body is a *coin* lodging in the cervical esophagus as shown in Figure 2.

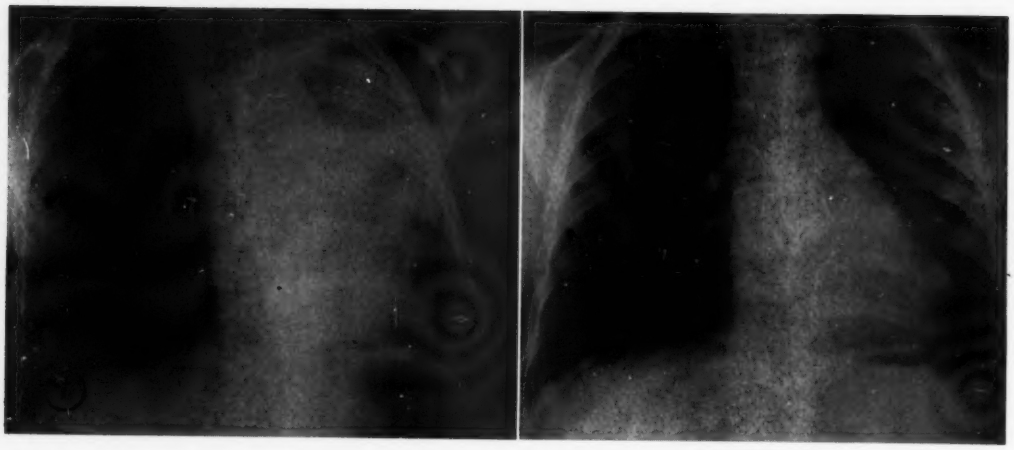
Buttons are likewise quite common and lodge at the same place, and some are nonopaque and are not shown unless one gives a little opaque mixture, which will outline the bone (Figure 3).

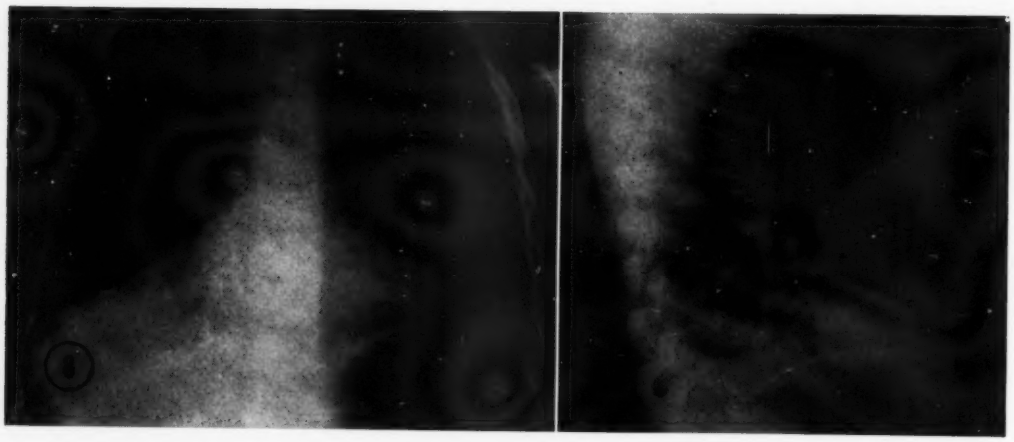
It is important for every one of you, I think, to consider this problem at least from one angle, at least from the angle of avoidance of overlooking foreign bodies, because even today with all the literature that has been accumulated about foreign bodies, there are still too many cases of foreign bodies that come to us a week, two weeks, two months, even years after the accident.

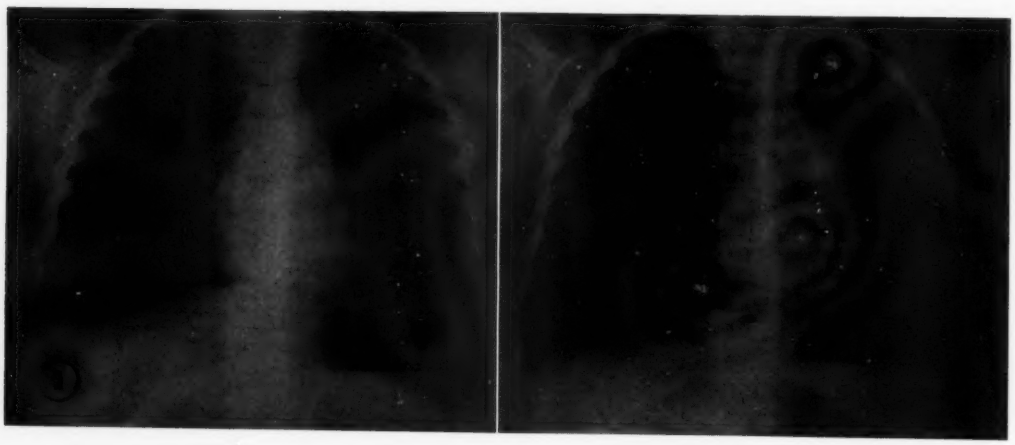
Speaking of overlooked foreign bodies, Figure 4 is the x-ray of a girl who came from near Philadelphia. She was thought, as a child, to have choked on a wooden button but it did not cause too much trouble and the incident was more or less forgotten. She grew up, got married, and went to Panama with her husband. A month or two after she got to Panama she was having so much difficulty in swallowing that the doctors made some x-rays. They did

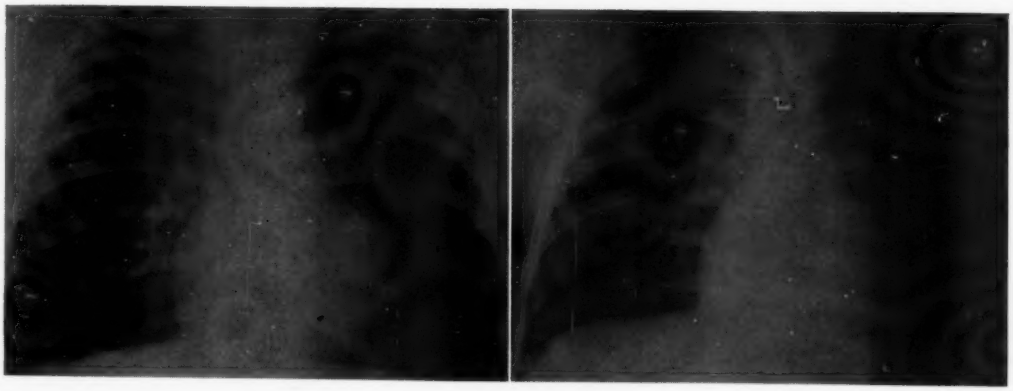

B
A

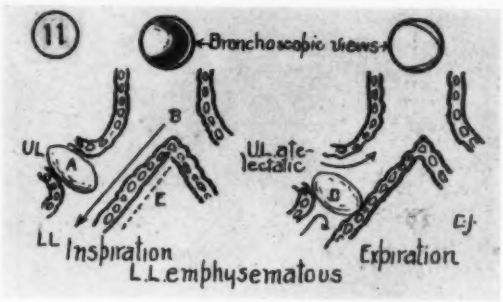


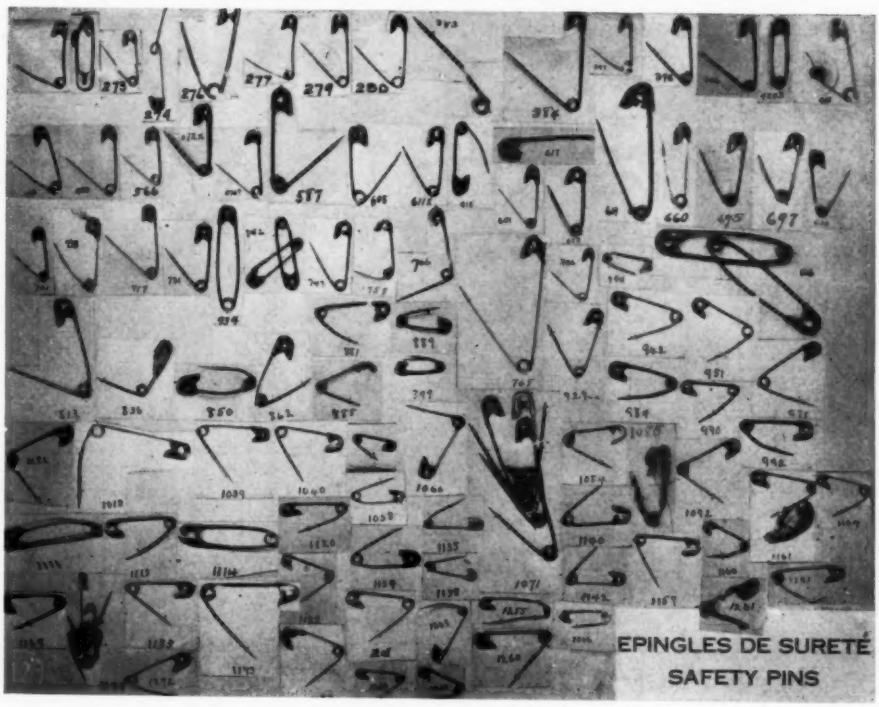









11
Bronchoscopic views
B
UL
A
C
LL
Inspiration
UL atelectatic
D
Expiration
L.L emphysematous


EPINGLES DE SURETÉ
SAFETY PINS

not know just what was wrong but they were sure there was some trouble in the cervical esophagus. They sent her back to Philadelphia and we found that the button was still there. That was one of the cases of longest duration that I know of with this kind of object. It is very unusual for a foreign body to remain so long in the esophagus.

The *jackstones* used as toys are a surprisingly common object, and they cause a lot of obstruction of the airway as well as the esophagus, sometimes sufficient obstruction to necessitate tracheotomy (Figure 5).

A tooth plate, which is just one example of a rather small partial denture, is illustrated in Figure 6.

While we are on the subject of dental objects, you see that there is a great variety to the objects of more or less dental character—teeth and fillings and caps; but these small objects generally occur in the bronchus, sometimes getting quite far peripherally. The root canal reamers, when they go down into the bronchial tree, generally go far out into the smaller bronchi, and they are among the objects that have to be removed with fluoroscopic aid.

This very important group of vegetable foreign bodies, peanuts, other nut kernels, seeds, and shells, are especially important in children. One of the large groups of foreign bodies occurring in children is constituted by peanuts and similar nuts, generally in children under 2 years of age. Sometimes we are asked what use there is in taking an x-ray picture in a peanut case, since a peanut will not show up in the film. The point is that though the peanut itself does not show, the effect on aeration does show, and in the fluoroscope and x-ray film you will find either an atelectasis or an emphysema. In this case you have an atelectasis of the left lung due to complete obstruction of the left bronchus (Figure 7).

At the right is the picture after uncorking of the bronchus by removal of the foreign body when perfect aeration has been restored.

In Figure 8 the atelectasis present is also due to a foreign body, but it is only the right lower lobe that is affected. Either one lobe or the whole lung may be involved.

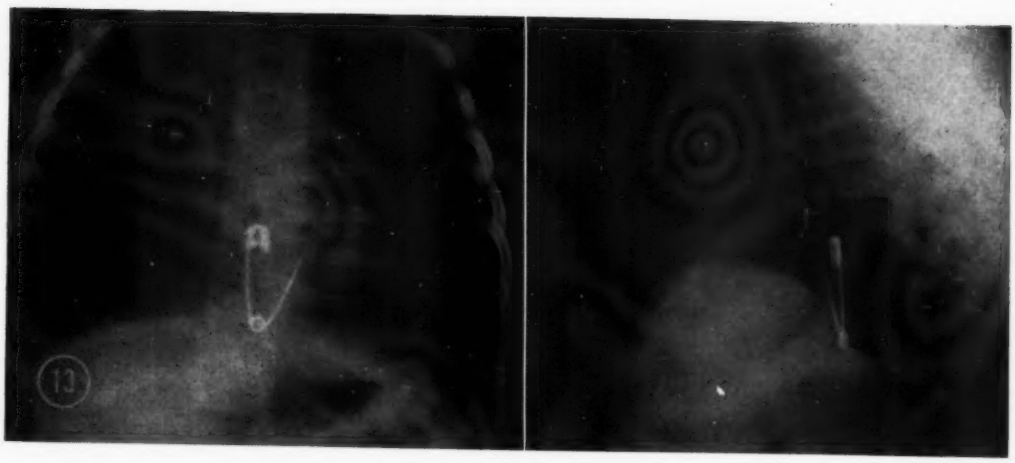
A case of obstructive emphysema is shown in Figure 9. Notice that the right lung is found to be ballooned on expiration. Check valve obstruction of the right bronchus has caused an emphysema. Figure 10 is a case which was one of the difficult ones from the point of view of diagnosis because there was bilateral obstructive emphysema and, in fact, the x-rays were at first reported negative. It was then realized that there was limitation of diaphragmatic excursion and the explanation was that there was bilateral foreign body obstruction—peanuts in both bronchi. (Inspiration film to left, expiration to right.)

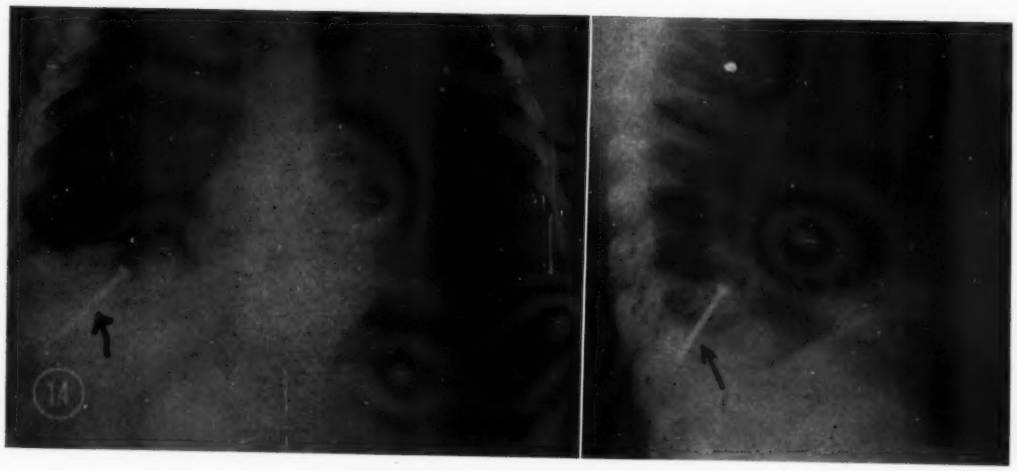
A diagram of one of the complicated mechanisms that we find occasionally in some of these cases may be seen in Figure 11. This patient had a prune stone in the upper lobe bronchus. There was alternate atelectasis and emphysema of the upper lobe because it was pumped empty as the foreign body went back into the main bronchus. This could be seen under the fluoroscope and the explanation was determined later by the bronchial examination.

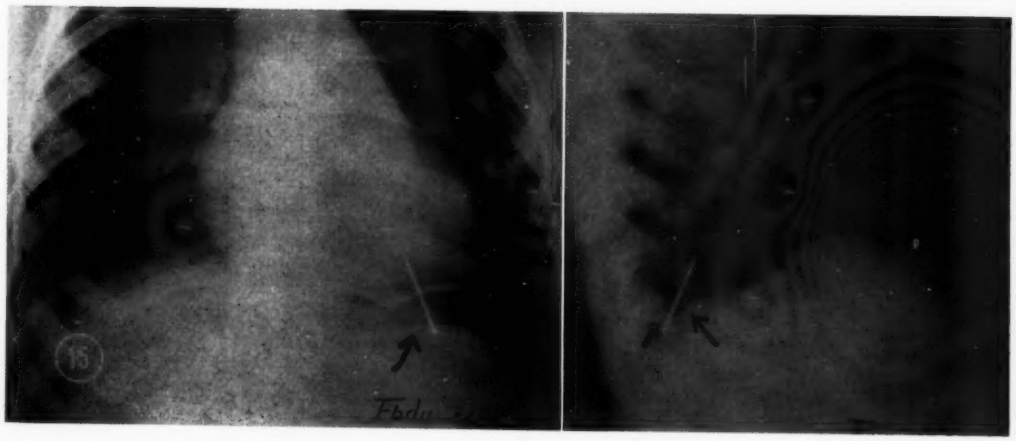
Safety pins constitute a very large and dangerous group of foreign bodies, occurring singly for the most part, and for the most part open. If they are closed, they of course do not involve any particular mechanical problem of extraction and very little risk. They occur sometimes in bunches as in two cases illustrated (Figure 12).

Sometimes the problem of removing a safety pin is very difficult. I will not go into any detail concerning the mechanical problems involved, but there are about seventeen different methods of dealing with an open safety pin. The one in the lower esophagus would probably be best removed by grasping it by the ring and passing it into the stomach, allowing it to turn around, then bringing it out with the point trailing (the method of "endogastric version"). (See Figure 13.)

Figure 14 illustrates a case that is more easily done under biplane fluoroscopic guidance, as


13


14


15

are most cases of screws and nail heads upward in the bronchus. This is another difficult mechanical problem because it is difficult to get the expansion necessary to permit the forceps blades to pass over the head of the screw or nail and extract it. That is more easily accomplished under fluoroscopic guidance.

Screws and nails are often found corroded from long sojourn in the bronchus. Common pins are frequently found and they are also difficult because they go far out into the smaller branches of the bronchial tree and must be removed by fluoroscopic guidance (Figure 15).

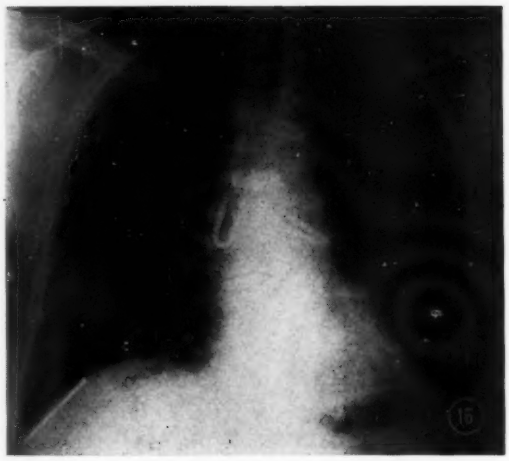
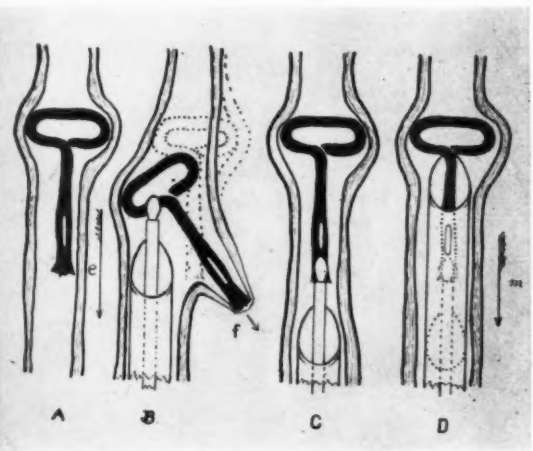


Figure 16 is just one example of a complicated staple case. This man was fixing a fence and had his mouth full of staples and nails when somebody told him a funny story. He got one staple in each bronchus and a nail in the right lower lobe. They were all removed by fluoroscopic guidance. Incidentally he did not realize that he had swallowed the objects until some days after the accident. He went to the doctor a week or so later and said he had a bad cough. I think he mentioned the incident, and the doctor had the x-ray taken, which gave the explanation.

We have had a number of cases in which can openers were swallowed by children (Figure 17). They generally present a mechanical problem. We cannot grasp a foreign body by the first part we see. If we do, we perforate the wall. We must retreat it down and grasp it by the proper part, removing it without pulling the point into the wall. "Advancing points perforate, trailing points do not."

Meat occurs not infrequently as a foreign body, but generally in patients who have some form of obstruction of the esophagus. It is rarely that meat occurs as a foreign body in the normal esophagus, but occasionally in case of a very hasty and gluttonous eater a piece of meat may stick.



Dissecting Aneurysm of Aorta

JAMES E. PAULLIN[1] AND DAVID F. JAMES[2]

EMORY UNIVERSITY SCHOOL OF MEDICINE, ATLANTA

For the past ten or fifteen years, we have been interested in the early diagnosis of dissecting aneurysm of the aorta. In 1937 McGeachy and Paullin[1] reported from the medical service of Grady Hospital 6 patients with this disease in whom the diagnosis was correctly made in 3. In 1943, Logue[2] from our clinic reported 12 patients in whom a correct diagnosis was made in 10. Now, we wish to report an additional group of 11 patients who entered the Grady Hospital from January 1946 to June 1947. Nine of these were correctly diagnosed. Two of these diagnosed as having dissecting aneurysm are living. One of these was operated on by Dr. Osler Abbott and is living at present.

Since 1937, quite a few articles have appeared dealing with this disease. A number of statistical studies have been made detailing the symptoms, physical signs, laboratory findings, and other phases of this symptom complex with which you are familiar.

The purpose of our presentation is not so much to review all of the symptoms, physical findings, laboratory data, x-ray, and electrocardiographic findings with which you are familiar, but to present a few observations which are of interest in their relationship to the x-ray diagnosis and to the development of methods of treatment.

To briefly summarize our knowledge: It is well known that dissecting aneurysm of the aorta occurs most frequently in men between the ages of 40 and 60 years. The onset is sudden, usually with intense pain which is retrosternal and frequently felt in the back. It may radiate to the arm or to the neck. The pain may begin during exertion or while the patient is at rest. Occasionally, there is no pain; in such patients the dissection proceeds very slowly.

With rupture of the intima of the aorta, the dissection begins. Symptoms and physical signs appear and vary with the extent of the dissection and the branches of the aorta involved. If dissection occurs, as it usually does, in the first four centimeters of the aorta, and if the area involved is small, the patient may have only pain and shock. Very rarely, however, does the process stop at this point, but separation of the intima and media progresses and it may involve all branches of the aorta from subclavian down to and including femoral arteries.

In the event the carotid artery is involved,

[1]Professor of Clinical Medicine, Emory University School of Medicine.

[2]Associate in Medicine, Emory University School of Medicine.

Presented before the meeting of the Interstate Postgraduate Medical Association of North America, St. Louis, Missouri, October 14 to 17, 1947.

JAMES E. PAULLIN

the patient may have symptoms referable to involvement of the central nervous system, and they are frequently diagnosed as having a cerebral vascular accident manifested by either a hemiplegia, temporary loss of vision, unconsciousness, or other signs pointing to involvement of the central nervous system. These symptoms and signs are produced by the dissection involving the carotid arteries causing a diminution of the caliber of the vessels and interfering with an adequate supply of blood to the brain.

SYMPTOMS

MANY of these patients complain of a burning sensation over the entire body, particularly severe in the chest, the arms, and legs. Numbness and marked weakness of the lower extremities occurs frequently. Severe abdominal pain is common, and occasionally patients with this disease have been diagnosed as having either a perforative peptic ulcer or acute appendicitis. Marked lumbar pain occurs in those patients who have dissection involving the renal arteries. Varying degrees of shock are encountered, from that in which the patient is in a stage of complete collapse with imperceptible pulse, cold, clammy skin, shallow respirations, unobtainable blood pressure, to the milder degrees of shock without marked disturbance of either the blood pressure or pulse. The degree of shock depends to some extent on the location, the extent of, and the rapidity with which the dissection occurs.

PATHOLOGY

The pathologic changes observed are interesting because at one time it was thought that syphilis played a considerable role in its causation. Now we are convinced that syphilis is not an etiologic factor. Arteriosclerosis and hypertension are the factors which are associated with and probably responsible for all cases of dissecting aneurysm of the aorta. Microscopic examination of the aorta reveals a cystic degeneration of the media, together with fragmentation of the elastic fibrils and the presence of a colloid-like material. These changes cause a weakening of the aortic wall. When hemorrhage from the vasa vasorum occurs in the media of such a diseased area, a bleb forms, stretching the intima, ultimately producing a rent which furnishes an entrance for blood from the aorta and dissection begins. In our experience, this is the most common pathologic lesion. The extent of the dissection will depend on the condition of the artery, the amount of atheroma, and height of the blood pressure.

PHYSICAL SIGNS

These vary considerably, depending on the extent and rapidity of aortic involvement. The heart is usually increased in size, particularly the dullness beneath the sternum is increased in width. There may or may not be a loud systolic or a diastolic murmur at the aortic area. A history of hypertension over a period of years may be obtained. With dissection, in

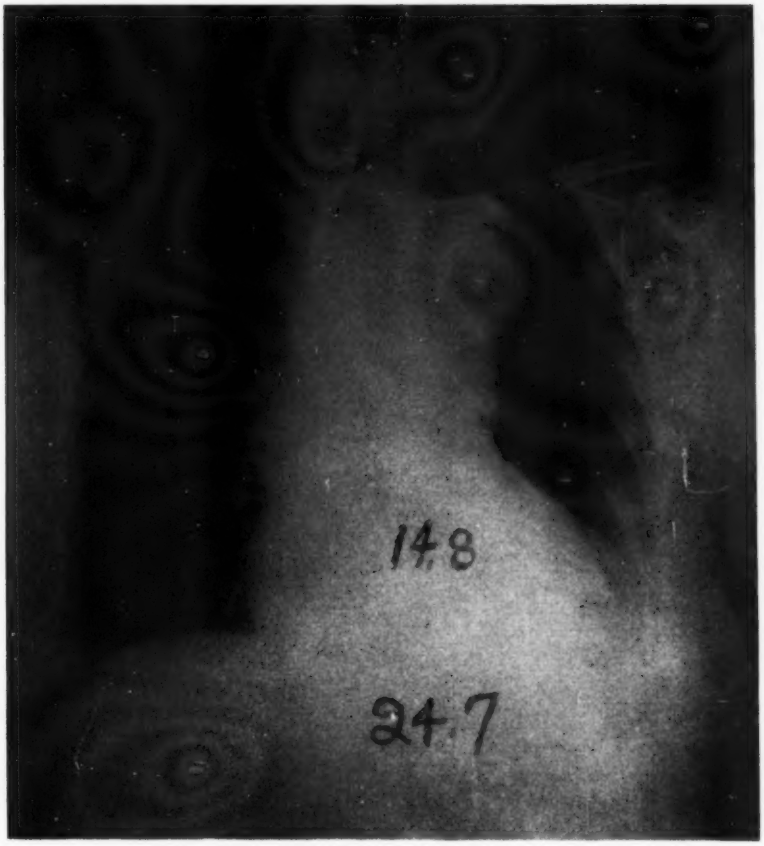


Figure 1. Chest x-ray of Case 1, demonstrating the finding of widening at the cardiac base and tortuosity of the aorta—interpreted as "consistent with a diagnosis of dissecting aneurysm."

the majority of patients, there is an inequality of the pulse; the radial pulse on one side may be easily felt, whereas it may be feeble or absent on the other. The same can be said of the carotid and femoral pulses. As dissection proceeds down the aorta, there occasionally appears in the inguinal region a nonpulsating tumor which varies in size from a mass 1 or 2 cm. in diameter to a lump 10 or 12 cm. in diameter. Such a swelling has been mistaken for an abscess and surgically drained with disastrous results. There may be a decided difference in the temperature of the extremities. The skin is usually cold or clammy with a normal or rapid pulse. The blood pressure is usually elevated. Manifestations referred to the nervous system have been mentioned.

Laboratory findings do not help very much in making a diagnosis. There is a slight leukocytosis, an albuminuria, and if the renal arteries are severely involved there develops a diminished urinary excretion, increased nonprotein nitrogen of the blood, uremia, and death.

The x-ray, however, is of a great deal of value, in diagnosis particularly—fluoroscopic examination as well as studying films. Both show an increase in the mediastinal shadow with occasional displacement of the heart downward and to the left, as shown in Figures 1 and 2. With arteriography separate channels

Figure 2. Chest x-ray in Case 2, demonstrating the same widening, but at a different level.

in the aorta can be demonstrated.

The electrocardiogram usually shows a left axis deviation and at times the findings of coronary insufficiency or those of a severe coronary occlusion, as shown in Figures 3 and 4. This usually occurs only in those patients where the coronary arteries become involved in the dissection.

PROGNOSIS

THE final outcome in most of these patients is usually one of the following:

1. The dissecting aneurysm may rupture into the aorta; the original rupture which occurred just above the aortic valves may dissect for some distance along the aorta and again rupture at a distal point into the aorta. A patient with only this may live for several years. We have had one patient who lived five years after his original rupture.

2. Rupture of the aneurysm into the mediastinum where the bleeding may be confined to this area for several days or, rarely, weeks.

3. Rupture into either the pleural or abdominal cavities.

4. Rupture into the pericardium.

Your attention is directed to a consideration of the two undiagnosed cases: To describe a method of radiologic diagnosis utilized by Dr. Hans Weens of the Department of Radiology, in one of our patients; to discuss the mechanism by which pain in the extremities is produced and the therapeutic implications of this mechanism; and to discuss a method of therapy employed in one of our patients.

CASE REPORTS

In patients No. 7 and No. 8, a diagnosis of dissecting aneurysm was not made. Patient No. 7 was a 40-year-old colored maid who came to the hospital because of the sudden onset, six hours before admission, of a severe mid-back pain radiating anteriorly and accompanied by considerable dyspnea. She was known to have had syphilis for six years, which had been poorly treated. She was severely hy-

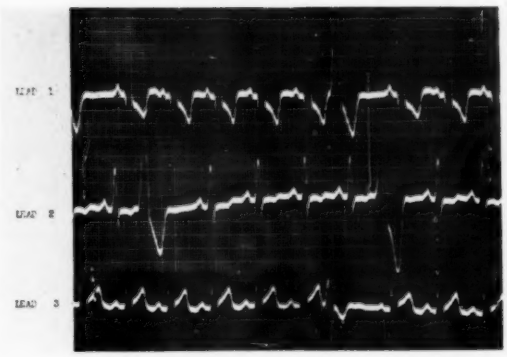


Figure 3. Electrocardiogram of Patient No. 1, showing the usual findings in dissecting aneurysm—evidence of left ventricular strain predominates.

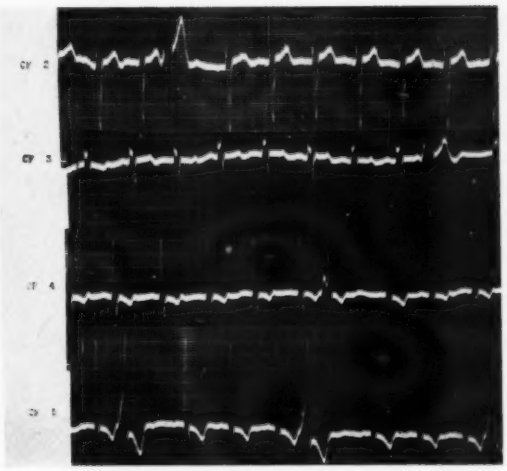


Figure 4. Continuation of electrocardiogram of Patient No. 1.

pertensive and arteriosclerotic for several years. She had had congestive failure off and on in varying degrees for five years, as well as a tracheal tug.

An x-ray of her chest six years before the present admission showed a right mediastinal shift, rightsided atelectasis, an enlargement of the aorta, and she was diagnosed then as having syphilitic aortitis with an aortic aneurysm.

On this admission she was orthopneic and in extreme distress. The ocular fundi were quite arteriosclerotic. There was a rightsided tracheal shift, a tug was present, the heart was markedly enlarged, the rhythm was regular, and there was a systolic as well as a diastolic murmur heard over the base. Over the eighth, ninth, and tenth thoracic vertebrae there was exquisite tenderness. The liver was enlarged. All peripheral pulses were present, forceful, and of water-hammer quality. Pistol shot sounds were heard over the femorals. The Kahn blood test was positive. An x-ray of the chest revealed diffuse cardiac enlargement, extensive atelectasis of the right lung with mediastinal shift to the right and a small amount of pleural fluid. An electrocardiogram showed left axis deviation, an auriculoventricular dissociation, which was thought to be a digitalis intoxication.

The patient was sedated and 100 cc. of clear fluid was withdrawn from the right pleural cavity. Dyspnea constantly increased, edema of the lungs developed, and she died forty hours after admission. The chest pain persisted throughout her hospital stay.

The clinical diagnosis was syphilitic aortitis with vascular aneurysm, possibly rupture, with secondary rightsided lung atelectasis.

At autopsy, aside from generalized arteriosclerosis and general cardiac hypertrophy, an extensive dissecting aneurysm beginning at the exit of the left common carotid artery, and extending to the aortic bifurcation, was found. The only arterial branch affected was the superior mesenteric artery, along which dissection extended for 3 cm. There were small tears into the aortic lumen near the renal arterial branches, but no rupture was found superiorly. Pulmonary edema was marked.

The history of poorly treated syphilis, despite the fact that we knew syphilis was not an etiologic factor in causing dissecting aneurysm, the positive Kahn blood test, suggestive evidence of saccular aneurysm of the aorta of several years' standing, the presence of an aortic

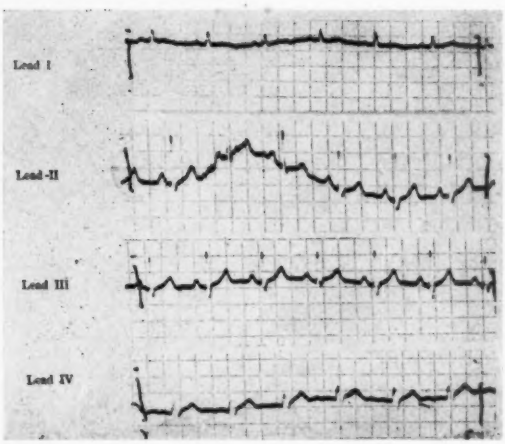


Figure 5. Normal electrocardiogram of Patient No. 9. (Dissecting aneurysm of arch and descending portion of aorta.) This was made about three weeks after the dissecting had occurred.

diastolic murmur, led us to the erroneous conclusion that we were dealing with a syphilitic aneurysm which had ruptured.

Case 8—I doubt seriously if anyone would have suspected a dissecting aneurysm in this patient. She was a 35-year-old female, the youngest patient we have seen, who was known to have had hypertension for at least a year. She was completely symptomless until less than one hour before death when, on her way to town with her husband, she complained of sickness to her stomach and at once began to vomit food she had recently taken for supper. She became comatose quickly and was admitted to the hospital.

The clinical diagnosis was rupture of the stomach, cause undetermined. She died within an hour after she reached the hospital.

The essential autopsy findings were marked subcutaneous emphysema of the anterior chest wall extending into the axillary spaces, into the neck and face, causing puffiness of the cheeks and eyes. The abdomen was markedly distended and tympanitic, and upon separating the rectus sheath the peritoneum bulged into the incision. Upon puncture of the peritoneum much gas escaped from the abdomen. The peritoneal cavity contained 250 cc. of a cloudy fluid. On the anterior surface of the stomach there were two rents in the serosa 4 cm. and 6 cm. long. At the upper end of the short rent there was a 1 cm. tear through all layers of the stomach allowing gastric contents to empty into the abdominal cavity. There was free air in the pleural cavities and a marked mediastinal emphysema. The aorta was sclerotic and inelastic with a transverse rent 1.7 cm. long just above an arteriosclerotic plaque in the proximal portion of the ascending arch which dissected into the ascending aorta as far as a calcified plaque in the left subclavian artery, where there was another transverse rent in the intima. No connection between the dissecting aneurysm of the aorta and the rupture of the stomach could be made. The stomach contained approximately 200 cc. of semisolid material, and there were four longitudinal ruptures from which gastric contents escaped. Why these occurred, we are unable to say.

The anatomic diagnosis was dissecting aneurysm of the aortic arch, medial cystic necrosis of the aorta, hemopericardium, which caused death, hemorrhage into the stomach wall with rupture of the stomach, tension pneumothorax and peritoneum, mediastinal emphysema, generalized arterial and arteriolar sclerosis.

The next patient we report is a 55-year-old white salesman who was well until three weeks before admission to the hospital, when, on alighting from an automobile, he had a sudden "tearing" pain located in the substernal and epigastric regions which lasted for about forty-five minutes and was relieved by morphine. The pain did not radiate; it was accompanied by moderate dyspnea and marked sweating, and left him feeling weak. At that time, a roentgenogram of his chest made in a distant town revealed a peculiar shadow in the left upper chest. Since the onset of pain he had a dry hacking cough which had diminished some by the time of his present admission. No recurrence of the severe pain had occurred, but

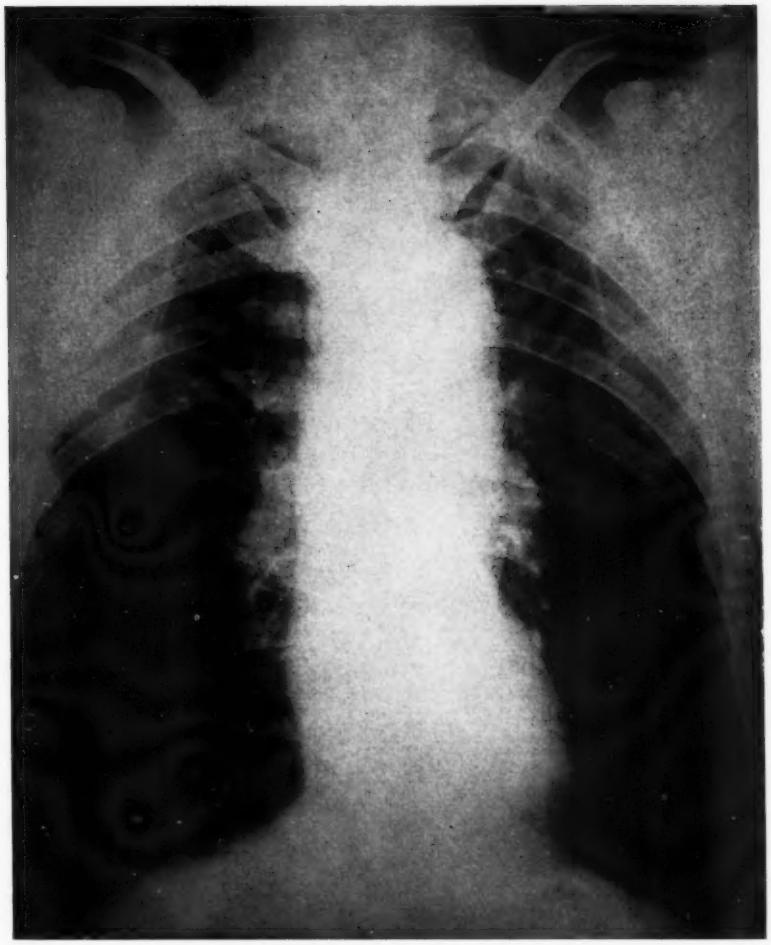


Figure 6. Chest x-ray of Patient No. 9, showing the normal-sized heart and the dilated descending portion of the aortic arch.

he continued to complain of weakness, loss of weight (30 pounds), and soreness which was localized under his manubrium.

Physical examination was essentially negative. His blood pressure was variable, with slight differences in the two arms, varying between 130/70, left; 150/90 mm. Hg., right. The next day, it was 156/100, left; 164/110, right. The pressure in his legs was practically the same—168/120 mm. Hg. He was quite emaciated and weak. There was a tracheal tug. The heart was normal in size, with no murmurs. The peripheral vessels were normal, and there was no edema. The laboratory examinations of the blood and urine were essentially negative.

An electrocardiogram made three weeks after dissection occurred was within normal limits (Figure 5).

A roentgenogram of the chest showed both lung fields to be quite clear (Figure 6). The descending portion of the aortic arch was slightly dilated.

Figure 7, an angiocardiogram made by Dr.

Figure 7. Angiocardiogram of Patient No. 9. This demonstrates the narrowing of the blood stream in comparison with the total opacity of the arch and descending aorta, clearly differentiating the lumen of the aorta from the area of dissection.

Weens, demonstrates the narrowing of the blood stream in comparison with the total opacity of the arch and descending aorta, clearly differentiating the lumen of the aorta from the area of dissection. The x-ray was made after the intravenous injection of 70 per cent diodrast.

This patient was operated on by Dr. Osler Abbott. (To be reported later in more detail by Dr. Abbott.) A left thoracotomy was performed. The ascending aorta was found to be rather widely dilated and the aortic arch widened. After dissecting about 80 per cent of the aorta involved free, the vessel was wrapped as completely as possible with cellophane and cellophane projections were inserted into regions which could not be dissected free. The cellophane was sutured in place with heavy silk. The patient withstood the operative procedure well, and aside from a moderate left serosanguinous pleural effusion which was drained, he experienced an uneventful postoperative recovery and was discharged from the hospital twenty-one days later. Aside from

difficulty in gaining weight and chest soreness referred to the left shoulder, which disappeared when he was lying down, he was symptomless.

A chest x-ray two months after his discharge showed that the postoperative atelectasis had cleared, the thickened pleura at the left costophrenic angle had practically cleared, and there was a slight decrease in the size of the heart and of the aortic shadow.

Many attempts at roentgenologic diagnosis have been made, but now it is most important to localize the point of rupture if possible in order that the newer therapeutic procedure of wrapping the aorta with cellophane can be utilized and properly evaluated. Certainly now it is most important to know the localization and the extent of the rupture more than heretofore. If, on serial roentgenography, a rapidly progressive increase in the width of the aortic shadow occurs, one may feel safe in making this diagnosis. Usually, however, when the patient is first seen rupture and dissection have taken place to such a marked degree that little information can be added by serial x-ray studies.

The reasonableness of an operative approach in treating this condition is obvious but its efficiency will be evaluated by a careful study of those patients who are suitable for this type of treatment, and what the final results are on a larger series of cases than are now available.

So far, most of our time has been consumed in refreshing your mind on the classical features of the disease; there are other problems connected with the etiology and pathologic physiology of the disease which are most intriguing. Time does not permit a discussion of many of these, but one might inquire as to the cases of cystic degenerative changes in the aorta; many authors, notably Schnitker and Bayer,[3] Kountz and Hempelman,[4] and others, provide information which should be of fundamental importance in seeking etiologic factors in certain cases. What is the relationship between the metabolic changes occurring in pregnancy (where rupture occurs without the strain of labor), and rupture occurring in patients who have undergone thyroidectomy for severe hypertension?

Leg weakness with pain in the extremities should be further studied. It is generally believed that ischemia of the spinal cord due to dissection about the intercostal or other arteries supplying the cord is the cause. The condition is quite distressing and is difficult always to explain, particularly when there is adequate or good pulsation in the arteries of legs and feet.

The widespread attention given in the past to dissecting aneurysm of the aorta has resulted in more acute diagnostic accuracy and acumen. It is to be hoped that further investigation and observation of patients will be of great value in preventing its occurrence.

REFERENCES

1. McGeachy, T. E., and Paullin, J. E.: Dissecting aneurysm of the aorta. J.A.M.A. 108:1690-1698 (May 15) 1937.
2. Logue, R. Bruce: Dissecting aneurysm of the aorta. Am. J. M. Sc. 206:54-66 (July) 1943.
3. Schnitker, Maurice A., and Bayer, Charles A.: Dissecting aneurysm of the aorta in young individuals, particularly in association with pregnancy, with report of a case. Ann. Int. Med. 20:486-511 (March) 1944.
4. Kountz, William B., and Hempelman, Louis H.: Chromatrophic degeneration and rupture of the aorta following thyroidectomy in cases of hypertension. Am. Heart J. 20:599-610 (November) 1940.

Benadryl*

FOR RELIEF OF ALLERGIC SYMPTOMS: BY INJECTION

SAMUEL J. TAUB

CHICAGO

THE recognition that histamine is released by sensitized cells into the blood stream and is responsible for many of the symptoms occurring in urticaria, serum sickness, drug allergy, hay fever, asthma, and allied illnesses has now been fully demonstrated.[1] The local application of a solution of any of the antihistaminic drugs to a scratch on the skin inhibits the normal whealing from histamine or that from an antigen such as grass or ragweed pollen in an allergic individual.

The mechanism of this inhibition has not been fully understood, but it is believed that benadryl and pyribenzamine act by displacing histamine in the tissues.[2] It has been shown that the oral use of benadryl in 50 to 100 mgm. doses did not have any decisive effect on the whealing produced on scratch tests with serial dilutions of histamine or with ragweed extract in sensitive patients. When a solution of benadryl was mixed with the histamine or ragweed extract, or when it was applied to scratches prior to the application of these wheal-producing agents, there was a marked inhibition of the wheal phenomenon.[3]

In February 1945, Loew, Kaiser, and Moore published their results with benadryl in preventing fatal experimental asthma in guinea pigs exposed to atomized histamine.[4] And in March 1945, these authors were able to prevent anaphylactic shock in guinea pigs with synthetic benzhydryl alkamine ethers (benadryl).[5] Numerous articles have appeared in the literature since March 1945 by many clinicians on the use and results obtained with benadryl and pyribenzamine. Numerous observers have reported many side effects from each of these drugs, chiefly drowsiness, sleepiness, nervousness, fatigue, ataxia, epigastric distress, bad taste, tingling of the extremities, hysterical reaction, stupor, narcolepsy, confusion, palpitation, somnambulism, muscular aching, and acute melancholia.[6]

McElin and Horton described a prolonged reaction to benadryl, occurring on a dosage of one to three 50 mgm. capsules of benadryl a day; after one week the following effects were noted: puffiness of the eyes, three stools a day, considerable flatus, feeling of tightness in the arms from the shoulders downward, numbness of the hands, and a difficulty in coordination of thoughts and speech.[7]

The gastrointestinal symptoms are explained as due to decreased histamine and diminished secretion of the stomach. Mental lethargy, drowsiness, and weakness are intensifications of side reactions. Numbness and tingling of the extremities are normal side reactions. There are enough unpleasant side reactions from these drugs to make them a handicap in their use and to limit the size of the doses.

For these and other reasons, a solution of benadryl containing 10 mgm. of the drug per cubic centimeter was tried intramuscularly in patients who did not react well on the usual doses of benadryl and pyribenzamine by the oral route. One patient had a severe urticaria and angioneurotic edema of three months' duration; her private physician had prescribed large amounts of benadryl and pyribenzamine by mouth but she received no benefit from them. It was impossible to test her because of

*Beta-Dimethylaminoethyl Benzhydryl Ether Hyrochloride.

the irritable and diffusely whealing skin. One cubic centimeter of benadryl (10 mgm.) injected into the deltoid muscle resulted in a complete disappearance of all whealing and swelling within ten minutes. There were no side reactions, and the effect was dramatic. This single injection resulted in a complete disappearance of all urticarial lesions for the first time in three months, and the relief persisted until she returned the next day (twenty-four hours later), when a few urticarial lesions were present along both arms. It was possible to do complete intradermal tests on this patient ten to fifteen minutes after the intramuscular injection of 1 cc. of benadryl solution. Crabmeat gave a very severe local reaction, which also was accompanied by a new appearance of generalized urticaria and angioneurotic edema within five minutes following the intradermal test. A complete disappearance of these lesions occurred following the use of 1 cc. of benadryl solution intramuscularly.

SAMUEL J. TAUB

Benadryl solution quickly relieves itching in atopic or allergic dermatitis, serum and drug allergy, angioneurotic edema, urticaria, and contact eczema. Its use in several patients with an acute asthmatic paroxysm was of no benefit. In pollen hay fever and perennial allergic rhinitis no distinct advantage was noticeable in comparison with the use of this drug by mouth. Dramatic relief was noted in 3 patients with marked nasal blockage due to the rebound action from the prolonged use of nasal vasoconstrictors.

It can be concluded that benadryl solution for intramuscular or intravenous use in 1 cc. doses (10 mgm. of benadryl) is a valuable addition to our therapeutic armamentarium. The undesirable side reactions mentioned previously are avoided, and it is possible to control severe allergic symptoms quickly with a minimum amount of the drug. One of the most valuable uses is the control of dermographia and urticaria during the period that intradermal skin testing is attempted for diagnosis.

It must be emphasized that this type of therapy including other antihistaminic drugs does not replace skin testing to determine the etiologic factors, nor is it a substitute for thorough allergic management needed to control various allergic manifestations seen in practice.

Benadryl solution used was supplied through the courtesy of Parke Davis & Co.

REFERENCES

1. Taub, Samuel J.: Essentials of Clinical Allergy. Baltimore, Williams & Wilkins Co., 1945.
2. Wells, T. A., and Morris, A. C.: Observations on the antagonism of histamine by benadryl. Federation Bull. 4:140, 1945.
3. Friedlander, S., and Feinberg, S. M.: Histamine antagonists. J. Allergy 17:129 (May) 1946.
4. Loew, E. R., Kaiser, M. E., and Moore, V.: Synthetic benzhydryl alkamine ethers effective in preventing fatal experimental asthma in guinea pigs exposed to atomized histamine. J. Pharmacol. & Exper. Therap. 83:120–129, 1945.
5. Loew, E. R., and Kaiser, M. E.: Alleviation of anaphylactic shock in guinea pigs with synthetic benzohydryl alkamine ethers (β-*di*methylaminoethyl benzohydryl ether and β-morpholinoethyl benzohydryl ether). Proc. Soc. Exper. Biol. & Med. 58:235–237 (March) 1945.
6. Waldbott, G. L.: Clinical results with benadryl. J. Allergy 17:142–144 (May) 1946.
7. McElin, T. W., and Horton, B. T.: Clinical observations on use of benadryl: new antihistamine substance. Proc. Staff Meet., Mayo Clin. 29:417–429 (November) 1945.

DIAGNOSTIC CLINIC

The Unknown Diabetic

ELLIOTT P. JOSLIN*

BOSTON

THE UNKNOWN diabetic is an important factor in the revolution of the practice of medicine. The unknown diabetic is changing the doctor's status and more and more placing him in the employer class. I shall try to illustrate these two ideas in this presentation.

How many unknown diabetics are there in this country? The Oxford survey gives the answer. I know the town of Oxford well; it is just south of Worcester, Massachusetts. It is accustomed to diabetics because for sixteen years we have had over 100 diabetic children at camp each year in the town. The doctors in the town are familiar with the camp. The United States Public Health Service made a survey there last year, and learned from the doctors that there were 40 known diabetics in the town. However, when blood and urine examinations were done on 3,500 of the 5,000 inhabitants, they discovered that there were 30 unknown diabetics. (This was the first time such a survey had been done on a large scale in the history of the world.) If all of the people had been tested, it is quite obvious that there would have been one unknown diabetic to match each one known.

For some years I have considered the number of diabetics in this country to be a million. Proof of this came from a survey conducted with the help of the Medical Society of Arizona a few years ago in which we were able together to demonstrate that diabetes was just as common in Arizona as in the states where the death rate for diabetics was said to be four times as great: 10 in Arizona, 40 in some of the eastern states. We found that diabetes was just as common among Indians, inmates of prisons, and in the insane asylum, and just as common in the people generally and even among the doctors themselves as it was in such states as Rhode Island and New York.

Statistical studies led to the conclusion that the number of diabetics in this country was easily a million. These facts were buttressed by the reports of Blotner in Boston, Gates at Niagara, and by Olaf Hanssen in Bergen, Norway. We have a million known diabetics in the country and the Oxford survey brings out the fact that there is another million unknown.

How are you then to discover the unknown diabetic?

Age—Only one-third of the diabetics are under 40 years of age. There is no use looking

*Clinical Professor of Medicine, Emeritus, Harvard Medical School.

Presented before the meeting of the Interstate Postgraduate Medical Association of North America, St. Louis, Missouri, October 14 to 17, 1947.

through schools to pick out the diabetics; 2,500 boys must be examined to find one diabetic, or 2,500 girls, whereas after 65 years of age only 70 men or 45 women must be examined to disclose a case.

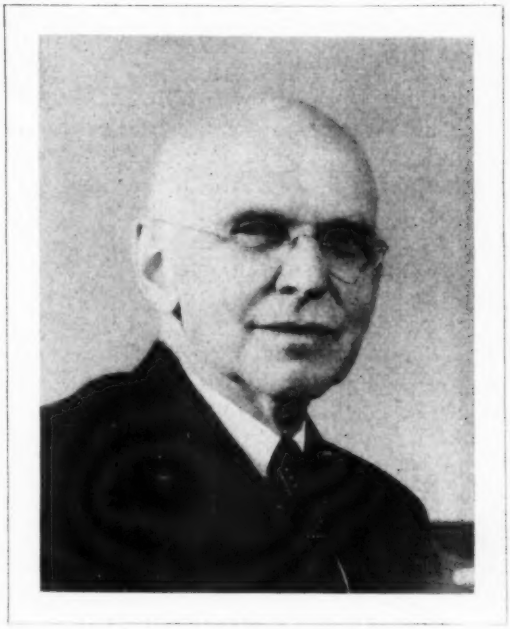
Sex—Females are more common than males in the diabetic group, but this is true only of females who have borne children. The incidence of diabetes in females who have not borne children resembles more that of the men.

Obesity—Eighty per cent are more or less overweight. If a woman comes into your office who is over 40 years of age, has borne children, and is obese, diabetes may be staring you in the face.

Heredity—A family history of diabetes is a very easy way to find the new diabetic. If you have one diabetic twin and it is an homologous twin, you know the other twin will come down with diabetes or already has it. You know that among all the patients the heredity is very high, even though they may not know it. The patient may say there is no heredity; but I learn that a sister has the disease. In fact, she has been my patient but has kept knowledge of it concealed. Recently in one history I found a patient who was an adopted child and never knew about her parents. Factors such as this make statistics faulty. I showed a man last week to a group of doctors; he was found to have diabetes at the age of 18 years, and there was no family history of the disease. About twelve years later, however, his brother was found to have it, and subsequently his mother learned that she also had diabetes. If you have one case in a family, I ask—who gave you diabetes? It is that patient's duty and interest to find out. In this way other unknown cases become known.

If you see a patient with diabetes, remember the incidence of obesity. Never allow a relative of a diabetic to leave your office without weighing him or her and calling to his or her attention the danger of the relatives of diabetics acquiring the disease because they are fat.

Jews—Diabetes is twice as common in Jewish as in non-Jewish people.



ELLIOTT P. JOSLIN

Chemical examination of the urine is important, but it is more important to examine the urine and blood sugar after a meal. Only a few cases are picked up by the fasting blood sugar or fasting urine. You are looking for new cases; you want to test the urine and blood sugar after a meal. It may be that there are some with a blood sugar of 170 who do not have diabetes, even though they have an accompanying glycosuria, but the number is few and they can be studied and eliminated later. Our diagnostic criteria demand glycosuria and a blood sugar fasting of 130 or 170 mg. after a meal.

Fortunately there is now a new blood sugar test which can be done in five minutes; this method will probably be published soon. We are beginning to use this method. In the course of the next year I am positive that there will be given to all of us blood sugar tests which will allow us to screen our patients very simply, easily, and much better than ever before.

Of what does this new clientele of 1,000,000 diabetics consist? The bulk of all diabetics is in

the lower income group, just as in other diseases; especially the unknown diabetics are in this group. I can illustrate this best by citing the patient whose diabetes is first discovered after he has entered the hospital in diabetic coma.

In Indianapolis last fall Dr. Peck collected for me 10 patients who had recovered from diabetic coma. When I studied them carefully, I found that none of those patients knew that he or she had diabetes until recovery from coma. I think it is truly wonderful that they could have 10 recoveries ranging from the first decade to the eighth and ninth decades of life. In our own group, 19 per cent of our cases never knew they had diabetes until they had recovered from coma in the hospital. Thirty-five per cent of Dr. Dillon's group in Philadelphia were not aware they had diabetes until they had recovered from coma. Here is an example in this patient from the St. Louis City Hospital who recovered from coma without ever knowing that she had diabetes; that was in 1939. This is a special group among the unknown cases—the emergency group, small but urgent. They exist everywhere. In Indianapolis there was a great rush of people from below the river for work during the war and this is one reason they had not been evaluated or picked out.

Thanks to Dr. Sexton, I bring in this patient to drive home the point of the unknown diabetic, and incidentally that unknown diabetics are often in the lower income group.

A characteristic of the "unknowns" is that they are early, mild cases and therefore they are overwhelmingly cases amenable to treatment. Years ago Naunyn brought out the fact that the severe case of diabetes treated vigorously often did remarkably well and the mild case neglected did badly. All the work that has been done on diabetes has confirmed this.

Years ago we took the diabetic doctors among our group of patients and proved that they did much better than others. We saw the same phenomenon among cases discovered by insurance examiners; the reason was that the disease was caught earlier and so was amenable to treatment. This fact, that the unknown million diabetics in the country, often symptomless, are the ones that are the most hopeful, who do the best and live the longest, cannot be emphasized too much. The insurance companies surely should take notice of them. In the last year fourteen of the insurance companies have been insuring some of our patients, (subsequently I learned forty-six companies are insuring diabetics;) but they are just reaching the stage where they can double the number of diabetics they insure, and double them among the group that will live the longest and do the best, because they are the ones, with the exception of this group of coma cases, who are caught in an early phase of the disease.

How are doctors going to treat an extra million diabetics? Today you are swamped with work. That is why I think the million diabetics will help to revolutionize the practice of medicine and will change the doctors from their present status more and more into an employer group.

We know that the aim of treatment is to control the disease. We know that we can abolish all the symptoms and signs of the disease. But how are we to control it? Recently the beautiful work done in Philadelphia by Dohan and Lukens was published. They have shown a new way of causing diabetes. They have taken a healthy cat and then produced artificially hyperglycemia; at the end of two weeks that cat was a diabetic. We have different methods of producing diabetes: giving alloxan; taking out the pancreas; injecting anterior pituitary extract. But the method of Dohan and Lukens goes further, because it carries with it for you and me a therapeutic handle. They showed that hyperglycemia in their cat will result in injury to the islands of Langerhans within two weeks and the cat would come down with diabetes.

If hyperglycemia will cause diabetes in a healthy cat with an undamaged pancreas, think how we must work against hyperglycemia in our diabetics who already have a damaged pancreas.

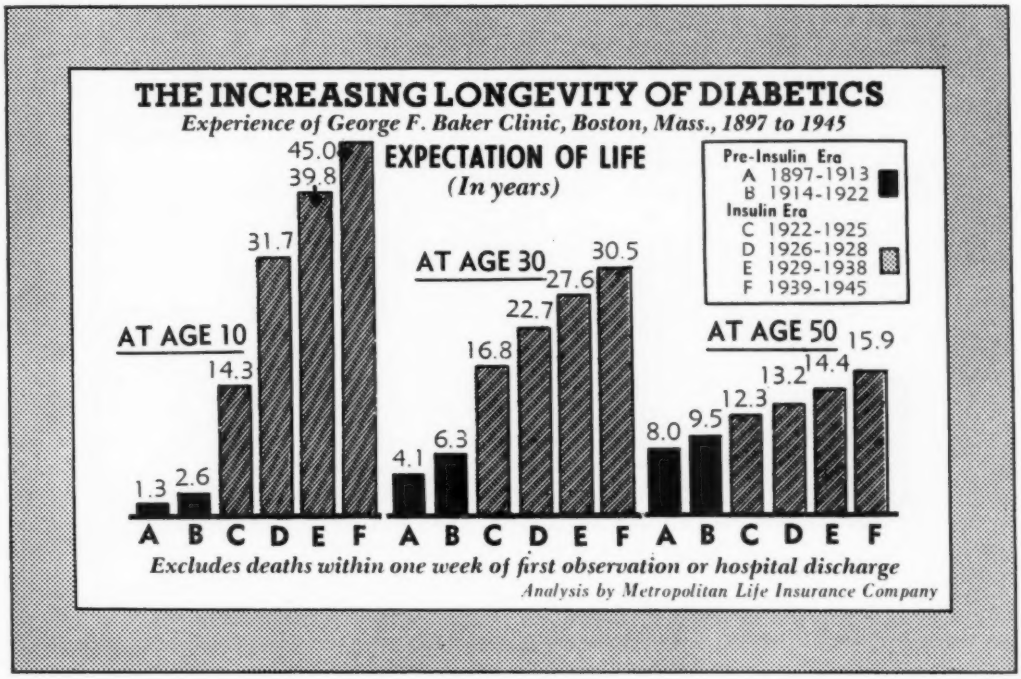


Figure 1.

A further point in their work which is important for us is that they were able to demonstrate that if, after the diabetes had been produced, they brought the blood sugar down to normal by diet, by insulin, or even by phlorhizin, within a reasonable time they could reverse the process and cure diabetes in the cat. As yet, this cannot be done in a human being, but their work is very encouraging and significant for each one of us. That is the aim we have before us.

How are you going to treat these additional million diabetics? By education of the patient. You cannot do it yourselves; you must have somebody to help you; you must have secretaries or nurses or nutritionists or dietitians. We cannot get them today or the range in salary is so high that we cannot afford such luxuries. What we must do, therefore, is have nurses' aides, educationists, high school girls, somebody who has the zeal and the desire to be helpful, and to train them to put across this education to the patients.

Only a few patients can go to the hospital. Our patients who are hospitalized now have had the disease an average of ten years. When I began talking before this Association my average case was dead in five years; now they live an average of over fourteen years.

Everyone should try to get a nurses' home available or get a diabetic to take in another patient. Nurses' homes can take a patient in on a Monday and send him home well-trained the following Saturday.

This all means that one must bring up a new class of people, more nurses' aides, more young people who have not been obliged to go through long years of training, who will help to teach the elemental things under your supervision to your patients. In other words, one must expand one's office force. The nurse in the office and the aides under her can nurse the

patient along from day to day, under the doctor's supervision, just as well as the doctor does in the hospital, and that is what must be done.

I am very fond of horses. I have a farm. While coming out here on the train I looked for horses working on farms. I did not see a single horse. We are building a boys' camp now, a lovely camp—somebody gave us the money for it. How are we doing it? We got a bulldozer to make the road and the ball park and the swimming beach. That bulldozer does more work in a day than a pair of horses and two hard-working men used to do on my farm, years ago, in one or two weeks, and the bulldozer wasn't tired at the end of the day; neither was the man who drove it.

We can't all have a bulldozer in the office, but we must have the equivalent if we are to treat these diabetics, because there are a million of them and they are in the lower income group and need our attention.

What are the results of treatment? I want especially to show you that there is more ahead in the treatment of diabetes than even in the past. It is reckoned by the Metropolitan Life Insurance Company that the death rate for our cases at the age of 10 years has dropped 99 per cent. Our death rate has fallen all along the line, but Figure 1 will bring out the fact that the treatment of diabetes has improved and is giving results.

Figure 1 shows my figures on some 8,300 dead diabetics plus several times as many living diabetics in three age groups: 10 years, 30 years, and 50 years. The point I wish to make for each one of you is that if you look at any of these groups you will see that there is not a break in the series. As you move from left to right showing successive periods of observation, beginning way back between 1898 and 1914 and coming up to the present, in each column you will see a record higher and better than the last. Not once from 1898 to 1947 has there been a break in the improvement of expectancy of life of diabetics 10, 30, or 50 years of age. That one fact I wish to leave with you because it encourages us all to go ahead. We can't conceive that progress will cease.

We often hear pessimistic reports about diabetes. Recently it has appeared that arteriosclerosis, which we know is common, is the cause of death in 67 per cent of these cases as compared with 17 per cent prior to 1914. As a matter of fact, arteriosclerosis has replaced coma. Coma was the cause of death in 64 per cent and is now the cause in 3 per cent; arteriosclerosis is now the cause of death in 67 per cent and was the cause in 17 per cent. But the idea that I wish to drive home is that today, even after twenty-five years of insulin, a diabetic can be free from arteriosclerosis. We have proof of it. Dr. Priscilla White most assiduously has collected the statistics of 200 of our 350 diabetic children who have lived over twenty years with diabetes. I will allow that 92 per cent of them show arteriosclerotic troubles, in their eyes, in their hearts, or their kidneys, but we have 8 per cent, 16 of those 200, who do not show arteriosclerosis, who are sound today, and that should be emphasized.

We have gone steadily ahead in the treatment of diabetes. We know that we have 8 per cent free from arteriosclerosis after twenty-five years of the disease, and we expect to have 9, 10, and 11 per cent, and far, far more, who are free from it.

Years ago we used to give medals to people who lived longer with diabetes than their neighbors who did not have it. Now the Diabetic Fund at the Boston Safe Deposit and Trust Company will award a new medal to those who have had diabetes for a quarter of a century with onset under 25 years of age and show no arteriosclerosis as demonstrated by examinations of the eyes by ophthalmologists and examinations of the blood vessels by roentgenologists and by clinicians.

I always like to talk to this audience because my job in life has been to treat patients and I know that this group pre-eminently is made up of doctors who treat patients. Therefore today may I leave with you one million more patients, one million more diabetics, and I beg you to treat them vigorously, to treat them so as to control the disease, because that is your opportunity and also your duty.

DIAGNOSTIC CLINIC

Subarachnoid Hemorrhage and Intracranial Aneurysm

HENRY G. SCHWARTZ*

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, ST. LOUIS

With the acceptance of lumbar puncture as an almost routine technic, subarachnoid hemorrhage of nontraumatic origin has become sufficiently common to be recognized as a significant factor in vital statistics. It occurs as frequently as primary intracerebral hemorrhage or apoplexy, and obviously becomes an illness of considerable importance to the physician in general.

Although "spontaneous subarachnoid hemorrhage" appears frequently as a diagnosis, the presence of blood in the spinal fluid is a symptom or sign rather than a disease. To attempt to cope with it without understanding the causative factors would be similar to treating the fever of meningococcus meningitis by the same method we would use in fever due to peritonitis.

Blood may enter the subarachnoid space in one of several ways. Hemorrhage from the surface of the brain may rupture into the pia mater, a deep cerebral hemorrhage may break into the ventricle, or hemorrhage can occur from one of the vessels in the subarachnoid space itself. It is the last type which is considered as primary subarachnoid hemorrhage.

The development of signs of increased intracranial pressure will depend upon the amount of bleeding and its persistence. If hemorrhage is great and if it remains unchecked, coma and death result. Symptomatically, hemorrhage usually results in sudden onset of headache, vomiting, stiff neck, dizziness, drowsiness which may develop into stupor and coma, chills and fever, and in about 17 per cent of cases, convulsions and paralysis. Most of these symptoms can and do occur with meningitis and are due to the mechanical and irritating effects of blood in the cerebrospinal fluid. Indeed, given such a picture in a previously healthy individual, the syndrome is diagnosed frequently as meningitis or encephalitis until lumbar puncture reveals bloody fluid.

Additional abnormal findings may appear, with involvement of the pupils or third nerve paralysis. Depending upon the site of the hemorrhage and involvement of adjacent cerebral tissue, one may also find other localizing signs.

Distinctive features of the spinal fluid following this type of hemorrhage are the following: (1) There is an even admixture of blood so that later specimens collected at the same puncture are as bloody or more so than the

*Professor of Neurological Surgery, Washington University School of Medicine, St. Louis.

Presented before the meeting of the Interstate Postgraduate Medical Association of North America, St. Louis, Missouri, October 14 to 17, 1947.

HENRY G. SCHWARTZ

first specimen obtained. (2) Despite gross blood there is no clot. (3) After twenty-four hours the supernatant fluid is usually xanthochromic.

The causative factors in spontaneous subarachnoid hemorrhage were for a long time considered to be numerous, and in the early literature we find among the prominent etiologic factors mentioned, arteriosclerosis, alcoholism, syphilis, pernicious anemia, aneurysm, brain tumor, and eclampsia.

In 1924 Symonds pointed out that aneurysm of the intracranial arteries was a very common cause and could be diagnosed during life. Subsequently with attention directed toward this possibility, more and more aneurysms have been looked for and found, so that it has become fairly well established that rupture of a congenital arterial aneurysm is by far the most common cause of so-called spontaneous subarachnoid hemorrhage.

As opposed to primary intracerebral hemorrhage or apoplexy where physical effort and hypertension appear to be precipitating factors, the onset of subarachnoid hemorrhage due to rupture of an aneurysm frequently occurs during ordinary activity or even sleep.

Before going on to a detailed consideration of aneurysms and the possibilities of radical therapy, it would be wise to evaluate as well as we can the prognosis in the average case. On the basis of most reports, the mortality rate following rupture of an aneurysm is about 50 per cent. Although a small percentage of cases may be diagnosed correctly before signs of leakage appear, a large bulk will not be seen until after at least the first hemorrhage occurs.

If 50 per cent of these cases recover from the initial insult, what are their chances of further trouble? The incidence of recurrence has been reported varying from 16 per cent to well over 50 per cent, and it is conceded by all that recurrences do occur and their threat is a constant source of anxiety to the patient and the doctor. Just how treacherous this condition may be was emphasized by Dandy, who described one case with recurrent hemorrhage and death eleven years after a previous episode.

In the face of poor prognosis, both as regards the immediate attack and subsequent recurrences, it seems justifiable to consider active forms of therapy in these cases. It has been not uncommon for surgeons to ligate the carotid artery in the neck in some of these patients. The effect of this extracranial ligation is assumed to be reduction of pressure and protection against subsequent rupture. The results have been variable. It has long been pointed out that in selected cases direct intracranial attack would be ideal if the hazards were not too great. No greater stimulus to this form of direct treatment could have been obtained than when Dandy published his monograph in 1944 in which he reported 36 operations with a mortality rate of 25 per cent.

If an aneurysm can be demonstrated and if its location suggests that it is amenable to surgery, the question comes up as to the time for

surgical intervention. Opinions vary. In a few instances early surgery appears to offer something to an otherwise hopelessly ill individual. On the other hand, in many cases the patient's condition is so precarious that the actual risk of any manipulation seems too great.

In the acute phase of the first few days it is desirable to keep the patient as quiet as possible and, if he is conscious, to relieve his headache and anxiety. For this purpose the barbiturates, chloral hydrate, codeine, and aspirin are most helpful.

As in other conditions with increased intracranial pressure, morphine should not be given. Elevation of the head of the bed is believed to aid cerebrospinal circulation and tends to relieve headache. Most men now agree that repeated spinal puncture is dangerous, therefore spinal puncture is advised only for diagnosis and then only a small amount of fluid should be removed.

In those cases where aneurysm is not demonstrated and where the patient improves very rapidly there is a great temptation to get him up too quickly, particularly in this day of early ambulation. If we consider that it takes at least four weeks for a clot to become organized, it is obvious that in unoperated cases a period of six to eight weeks of complete bed rest is desirable.

There are three types of aneurysms: mycotic, arteriosclerotic, and congenital. Mycotic intracranial aneurysms are uncommon and when they do occur there is a history of bacterial endocarditis. Arteriosclerosis as a cause of aneurysms of the smaller intracranial vessels is rare. It is generally agreed that most intracranial aneurysms are of congenital origin. The majority involve the anterior rather than the posterior circulation, and in turn the anterior part of the circle of Willis is predominantly the favorite site of these lesions.

In the drawing (Figure 1) of a view from above, the normal intracranial arterial circulation is seen. Focusing attention first on the circle of Willis it should be pointed out that the length of the intracranial portion of the carotid is rather considerable before it bifurcates into the middle cerebral and the anterior cerebral arteries. In a reasonably young individual the intracranial carotid may be occluded, and circulation of the anterior and middle cerebrals maintained by collateral blood supply through the anterior communicating artery.

Figure 1 also demonstrates the relationship of the cranial arteries to the cranial nerves before they leave the skull. The close proximity to the optic chiasm explains how visual disturbances can occur with aneurysms of the anterior cerebral and internal carotid arteries.

The third nerve is particularly vulnerable to swelling of the internal carotid, posterior communicating, middle cerebral, and posterior cerebral arteries. The fourth and sixth nerves supplying the rest of the ocular muscles are also commonly involved. Pain and sensory disturbances about the eye and forehead are due to compression of the first division of the trigeminal by aneurysms close to the cavernous sinus portion of the carotid.

As far as the posterior cranial vessels are concerned, it is clear from this drawing that symptoms of facial palsy, tinnitus and deafness, and swallowing might occur as a result of aneurysms arising from the branches of the vertebral and basilar arteries.

The third cranial nerve is most commonly affected in cases of aneurysm of the circle of Willis. The appearance of oculomotor palsy occurring suddenly should certainly make us consider an aneurysm of the circle as the most likely diagnosis.

Hemorrhage into the frontal lobe may also occur in lesions arising from portions of the circle of Willis, particularly from the anterior communicating or anterior cerebral artery. A middle cerebral or carotid aneurysm may rupture laterally into the adjacent temporal lobe. Depending upon the site of rupture and the amount of blood which is driven into the substance of the brain, we frequently find hemiplegia, aphasia, and hemianopsia, all of which are signs of considerable localizing value. The feasibility of surgical attack will depend upon

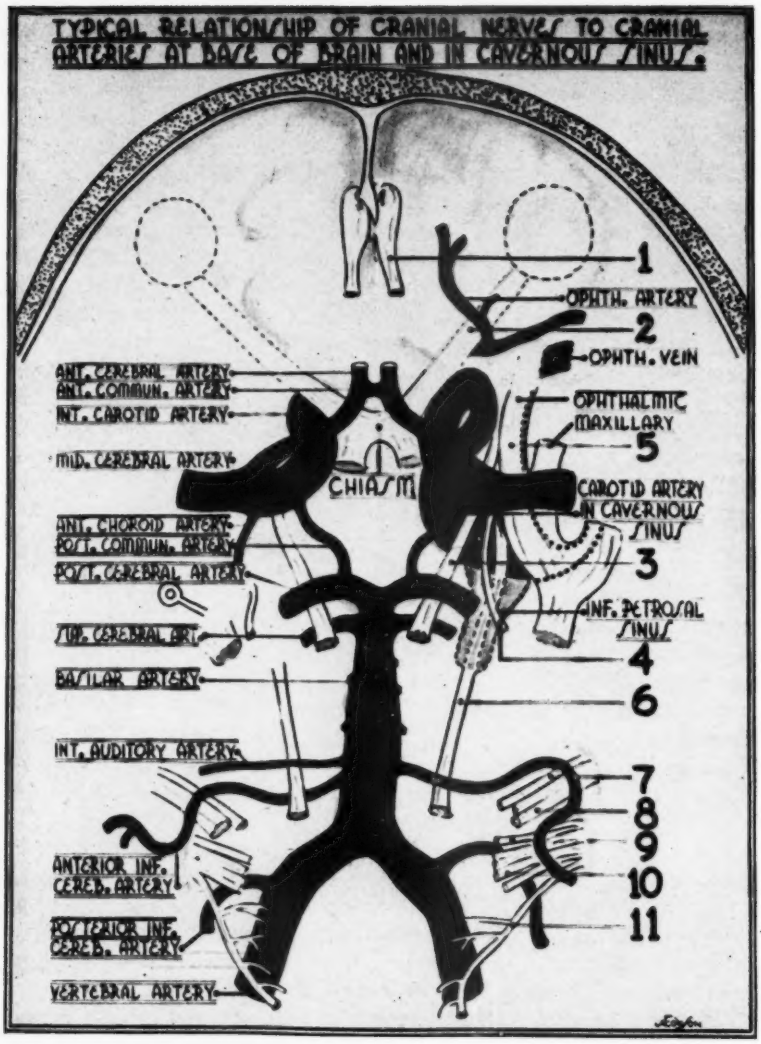


Figure 1. Normal intracranial arterial circulation, showing the relationship of the cranial arteries to the cranial nerves before they leave the skull.

the exact point of origin of the aneurysm.

Roentgenographic visualization was described by Moniz of Portugal. The method has been of great value particularly in outlining the anterior cranial circulation. Both thorotrast and diodrast are generally used, with most neurosurgeons preferring diodrast. The medium is injected through the carotid artery in the neck, and x-ray films of the skull are made as the material is injected.

Figure 2 is an angiogram of a patient with unilateral third and fifth nerve paralysis and hemiparesis. It shows clearly a sacculated aneurysm. You can see the cavernous portion of the carotid artery outlined, and the sacculated aneurysm arising from the intracranial portion

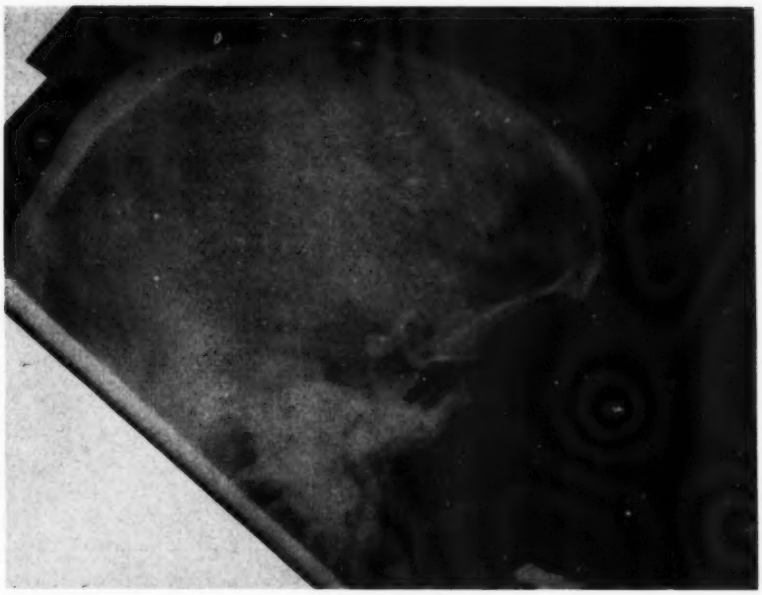


Figure 2. Angiogram of a patient with unilateral third and fifth nerve paralysis and hemiparesis, showing a sacculated aneurysm.

of the carotid before its bifurcation into the anterior cerebral and the middle cerebral. A lesion at this point is operable.

Figure 3 is an angiogram which shows a large sac arising from the middle cerebral artery. This is on the left side in a righthanded individual. Although the patient is young, direct surgical attack would not be advisable in view of the tremendous intellectual deficit that would result from cutting off the left middle cerebral blood supply.

Aneurysms of the posterior cranial circulation are less common than are those occurring anteriorly, and the congenital sacculated type is infrequently encountered. Vertebral artery angiography has thus far not been satisfactory, and in the absence of localizing signs, localization of lesions to this area is not generally possible. However, in many cases clinical localization may be quite accurate.

It is clear from Figure 1 that the close relationship of these vessels of the posterior circulation to the cranial nerves from the root of the fifth through the eleventh can give us invaluable localizing signs and also explain how the symptomatology is frequently similar to that of eighth nerve tumor. Pathologic reports of posterior fossa aneurysms have been numerous, but successful surgical attack has not been previously reported.

I WISH to present such a case today. This patient, a 27-year-old housewife, gave a history of eight or nine episodes of sudden onset of occipital and frontal headache and dizziness in a period of three years. Some of these attacks were sufficiently severe to keep her inactive for three to four months at a time.

On August 15, 1946, she had a sudden onset of occipital headache which roused her from sleep. The next morning she had staggering gait followed by nausea and vomiting. She was treated by a local physician with saline purgatives and obtained temporary relief of the latter symptoms.

Eleven days later she again had severe headache accompanied by roaring in the left ear,

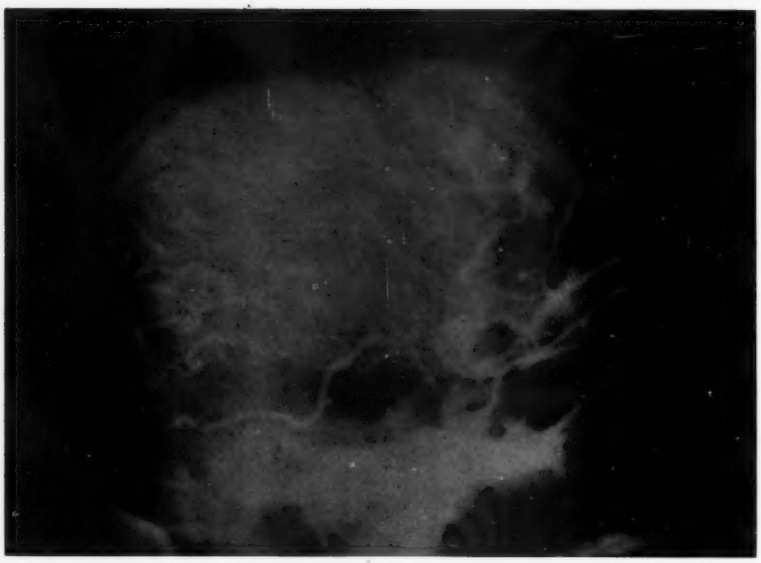


Figure 3. Angiogram showing a large sac arising from the middle cerebral artery. This is on the left side in a right-handed individual.

numbness of the left side of her face, and diminished hearing on the left. She had been seen by an otolaryngologist who found the aforementioned cranial nerve signs and referred the patient to me on October 3, 1946. She was treated with bed rest, with considerable improvement in all her symptoms and was transferred to Barnes Hospital on October 13, 1946. At that time there was hypesthesia of the left side of the mouth, bilateral nystagmus, and diminished hearing in the left ear. Spinal puncture showed normal pressure. The fluid was colorless, but contained 360 red cells, most of which were crenated.

With these findings a diagnosis of ruptured aneurysm of the left cerebellar pontine angle was made. Although the patient had practically recovered from the last attack, with her long history in a young woman obliged to be active it was felt that hemorrhage would recur later and put her life in considerable jeopardy. Surgery was recommended and accepted.

A unilateral left suboccipital craniotomy was performed on November 6, 1946, and the left side of the brain stem was exposed. A small sacculated aneurysm was found lying against the pons between the fifth and eighth nerves. It was dissected free from the brain stem and the artery was clipped on both sides and coagulated proximally. The postoperative course was uncomplicated. There was complete recovery of hearing, and neurologic examination was negative when she left the hospital on November 19, 1946, thirteen days after operation.

Since leaving the hospital eleven months ago she has remained well and happy and has had no further symptoms. We feel that this woman has been saved from inevitable death due to subsequent rupture of the aneurysm. She has no cerebellar signs or ataxia. Her gait is undisturbed. So far as the cranial defect goes, the incision was a longitudinal one, well within the hair line. There is a very small bone defect covered by muscle, and she is not in any danger of subsequent trauma.

THUS far we have discussed the most common cause of spontaneous subarachnoid hemorrhage. Certainly rupture of arterial aneu-

Figure 4. Combined air film and angiogram showing an obvious arteriovenous aneurysm in a 9½-year-old boy.

rysm accounts for the majority of cases in adults. In children, however, pure arterial aneurysm is rare, and when hemorrhage occurs in children the possibility of rupture of an angioma or arteriovenous aneurysm should be kept in mind. Pilcher of Nashville has recently reviewed the literature, which has been generally pessimistic in its attitude with regard to the possibility of eradicating such lesions, and has reported 3 cases in which angiomatous malformations of the brain were brilliantly extirpated. In his 3 cases convulsions were present, and this is a common symptom. Spontaneous subarachnoid hemorrhage occurred in one. We recently had a case in which the first signs or symptoms were due to massive hemorrhage.

This 9½-year-old boy was admitted to Children's Hospital on May 7, 1947. Prior to entry he had been in excellent health and was normally very bright and active. On the evening before admission he returned home after playing baseball complaining of headache, and vomited. He was put to bed. At 3:00 A.M. his mother was awakened by a disturbance in his room and found the boy lying on the floor thrashing wildly about, soiled with urine and vomitus.

On admission to the hospital he was wild and delirious. The pupils reacted poorly to light. His neck was slightly stiff. There was bilateral ankle clonus. The preliminary diagnosis was encephalitis or meningitis. Spinal puncture, however, revealed very bloody fluid.

The boy's condition remained precarious for several days. Eye signs were variable and it was felt that subarachnoid hemorrhage was secondary to massive intraventricular bleeding.

With conservative treatment there was painfully slow improvement. During his very stormy course, transient weakness of the right face and arm was noted, along with a right sixth nerve palsy.

On June 26, 1947, a pneumo-encephalogram was done. This demonstrated an air-filled pocket in the left frontal lobe communicating by a very narrow channel with a dilated left lateral ventricle.

At the same time an angiogram was done. The combined air film and angiogram (Figure 4) shows an obvious arteriovenous aneu-

rysm. The carotid artery is seen going up to the anterior cerebral; the anterior cerebral sends several large branches to the central area of flaky, opaque medium, and from this point, coursing rostrally, is a very large dilated vein.

It seemed clear that this aneurysm had ruptured into the left frontal lobe and the hemorrhage in turn had broken into the ventricle. Operation was performed on June 27, 1947, through a left frontal lobe flap. After reflection of the dura, even after the ventricle had been tapped, the left frontal lobe was very tense and bulging. At the extreme medial border was a large vein running rostrally and medially into the longitudinal sinus. It was possible to dissect the frontal away from the falx and to place a clip on the frontopolar branch of the anterior cerebral artery. With the arterial supply of the lesion thus occluded it was a simple matter to resect the medial portion of the frontal lobe with the contained aneurysm and intracerebral hematoma.

Except for an attack of appendicitis during the hospital course, his subsequent course was satisfactory. The boy was discharged on July 24, 1947, four weeks after craniotomy. He has remained perfectly well and is active and alert.

DR. SCHWARTZ: Are you going to school now?

PATIENT: Yes, sir.

DR. SCHWARTZ: Playing baseball?

PATIENT: No, sir.

DR. SCHWARTZ: Are you going to play next spring?

PATIENT: Yes, sir.

This boy has the medial half of his left frontal lobe removed. There is no aphasia because we were able to spare Broca's area.

IN SUMMARY, so-called spontaneous subarachnoid hemorrhage may be said to be a relatively common occurrence. Mortality without treatment is very high. The condition is most commonly due to rupture of an intracranial arterial aneurysm. A diagnosis of congenital aneurysm can be made during life in the vast majority of cases.

Where localization can be made and when the site of the lesion is compatible, direct surgical attack can result in cure. When surgery is not indicated or while awaiting a propitious moment for surgery, conservative treatment stressing complete rest is of great value. In children and young adults the possibility of congenital arteriovenous aneurysm should be borne in mind.

MEDICAL PSYCHOLOGY CURRICULUM PROPOSED

A NEW curriculum leading to a Doctorate in Medical Psychology has been proposed by Dr. Lawrence Kubie, associate in neurology at Columbia University College of Physicians and Surgeons. The proposal was made at a recent two-day conference on "ways to mental health" sponsored by the Harvard Summer School and the Massachusetts Society for Mental Hygiene.

Dr. Kubie believes that such a program would help meet the country's immediate needs for more psychiatrists. He suggests that a pilot test of such training be made by setting up a unit under the joint auspices of a leading medical school and an interdisciplinary university department such as the Department of Social Relations at Harvard.

Students in the proposed training program would be drawn not only from medicine but also from the fields of education, social work, general psychology and others. In contrast to the present training of a specialist in psychoanalytic psychiatry which takes twelve to sixteen years after graduation from college, the proposed new training would take only from six to eight years. Dr. Kubie also pointed out that under this plan existing facilities would be able to train twice as many specialists as at present.

DIAGNOSTIC CLINIC

Diagnosis and Treatment of Tularemia

LEE FOSHAY*

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, CINCINNATI

THE DIAGNOSIS of tularemia is seldom too difficult if the seasonal prevalence of the disease and the regional modes of transmission are borne in mind. Although the wild rabbit is the chief source of human infection the colloquial name "rabbit fever" may focus attention too exclusively on this animal as a transmitter.

It is well to remember that *Bacterium tularense* is widely distributed in nature, that it has relations with approximately 100 wildlife forms, that of these approximately one-half are arthropods, and that of the total about half have transmitted the disease to man. Hence, an essential part of the clinical history of tularemia is contact with a wild animal or contact with a biting arthropod, usually a tick or a fly. Such a history should be sought antecedent to all acute febrile diseases which have an abrupt and severe onset, and which occur during the known period of transmission. Since the incubation period is from one to ten days, usually from two to five, this history, which is so essential and occasionally so easily overlooked, should reveal an exposure within two to five days prior to the abrupt onset of severe symptoms.

The clinical bubonic types are very easy to recognize. The appearance of a primary lesion and of buboes, or both, within forty-eight to seventy-two hours of an abrupt, severe onset is a very fine leading triad, but the clinical typhoidal type, in which there are no primary lesions or buboes, and in which pneumonia so often dominates the picture, can be at times very misleading. The time and length of the "open season" for tularemia, dependent upon hunting laws, often coincides with the "open season" for pneumococcus, streptococcus, and other bacterial pneumonias. Under these circumstances tularemia may be forgotten. There may also occur combined or multiple infections. In such times it is wise to adopt the rule that when sputum from pneumonic patients does not display gram-positive cocci, or enough bacteria of any kind to excite attention, blood should be taken every three to four days for *Bacterium tularense* serum agglutination tests.

This same procedure could wisely be followed during the hunting seasons in all instances of abrupt onset, severe, markedly prostrating, acute febrile infections, especially those in which early trials with sulfonamides and penicillin are ineffective.

*Professor of Bacteriology, University of Cincinnati College of Medicine; Director of Service, Cincinnati General Hospital, Cincinnati.

Presented before the meeting of the Interstate Postgraduate Medical Association of North America, St. Louis, Missouri, October 14 to 17, 1947.

LEE FOSHAY

The agglutination test is standard and usually sufficient, a test of amazing reliability. It is never positive during the first week of the disease. It usually becomes positive sometime during the second week, with the titer rising abruptly later in that week or at the beginning of the third week, rising usually to a level of 1:640 or 1:1280.

Once a patient has acquired serum agglutinins as a result of tularemic infection, they persist for the length of life of the patient. This situation is quite unlike that of bacillary dysentery or of typhoid or paratyphoid fevers. The agglutinin titers in tularemia do not disappear after recovery is complete. This means, of course, that a person with symptoms that suggest tularemia of six days' duration but who was found on that day to have an agglutinin titer of 1:320 has an existing infection that is clearly not tularemia. The agglutinin titer must have resulted from a previous tularemic infection, assuming, of course, that the history is correct and that the onset of disease is accurately known.

INTRADERMAL tests may be performed with dilute suspensions of killed *Bacterium tularense*. The only virtue of the intradermal test—and, by the way, it suffers from faults common to all the intradermal tests—is that it is positive in 92 per cent of cases during the first seven days of disease when agglutinin tests are invariably negative. It does help in some patients, therefore, to use the intradermal test for early diagnosis at a time when the agglutination test for biologic reasons is simply not available. It requires forty-eight hours for the intradermal test reaction to become positive.

Bacterium tularense has few antigenic relatives among other agents causing human disease. We do observe some occasional cross-agglutination by the serums of patients with acute brucellosis if the homologous titers are high. In those cases in which I had opportunity to make tests there was no cross skin sensitization. I know of no infection which will produce a falsely positive reaction to a *Bacterium tularense* intradermal test. It is highly specific but it will fail in 7 or 8 per cent of all patients selected at random during the first seven days of disease. If failure occurs, and if you still think the disease is tularemia, repeat the test at forty-eight-hour intervals. If you do this you will usually foretell the eventual appearance of agglutinins by a day or two with the final, positive reaction on the second, or perhaps third, intradermal test. In this period the first test never sensitizes to make the third positive.

Streptomycin has become an amazingly effective remedy for this infection. The bacteriostatic level of streptomycin for *Bacterium tularense in vitro* is 0.3 microgram per cc., and some bactericidal levels, the concentrations at which streptomycin kills *Bacterium tularense in vitro*, are 1 microgram per cc. for a half hour, and 2 micrograms per cc. for eight minutes. These are small amounts to kill all of approximately 3,000,000 highly virulent *Bacterium tularense* per cc. The use of streptomycin in

TABLE 1

FREQUENCY OF CLINICAL TYPES AND PNEUMONIA IN STREPTOMYCIN TREATED GROUPS COMPARED WITH UNSELECTED TYPE AND PNEUMONIA FREQUENCIES

CLINICAL TYPES	STREPTOMYCIN TREATED (83)				UNSELECTED (832)	
	NUMBER OF CASES	TYPE FREQUENCY, PER CENT	NUMBER WITH PNEUMONIA	TYPE PNEUMONIA RATE, PER CENT	TYPE FREQUENCY, PER CENT	TYPE PNEUMONIA RATE, PER CENT
Ulceroglandular	61	73.5	15	24.6	87	15
Oculoglandular	2	2.4	1	50	3	13
Glandular	2	2.4	1	50	2	10
Typhoidal	18	21.7	16	89	8	51
Total	83		33	40		18

experimental tularemia of the highly susceptible and totally nonresistant laboratory animals, such as the rabbit, hamster, guinea pig, and mouse, betrays its amazing therapeutic efficiency. For instance, in the totally nonresistant white mouse the amount of streptomycin that will always spare exactly one-half of all animals challenged with approximately 100 mouse fatal doses, the median effective doses, is 350 micrograms for the 20 gm. mouse, that is, only 17 micrograms per gram to spare one-half of all mice. So, from *in vitro* and *in vivo* experimental work one would suspect that streptomycin should be an agent of high efficacy in human tularemia.

For human administration intramuscular, intermittent injection is used mostly, usually every third or fourth hour. Continuous drip may be given. Where pain locally is not caused, continuous subcutaneous drip is preferable to continuous intravenous drip. The latter may cause thrombophlebitis.

The purity of streptomycin is now reasonably high and early reactions of unfavorable nature are not seen. But even pure streptomycin may have toxic properties for some patients, causing drug fever, rash, nausea, or muscle cramps—the latter not often reported by others, but seen by us in a fair proportion of those who have untoward reactions. The worst response, the one that we hope will not occur, is the appearance of tinnitus and vertigo, indicating involvement of either division of the eighth cranial nerve.

Blood levels obtained during the administration of 50 mg. every three hours range from 4 to 6.5 micrograms per cc., and with 150 mg. administered every three hours they vary from 25 to 32 micrograms per cc., and with 1 gm. per day, by drip, from 12 to 20 micrograms per cc. of blood. Compare these levels with the *in vitro* killing level of streptomycin, 6 micrograms per cc. in one minute.

THE clinical effect of streptomycin administration in patients with tularemia is usually prompt and often dramatic. Characteristically the fever is down by or before the third day unless there are extensive visceral lesions with large exudates, usually pulmonic but perhaps serosal. The malaise, headache, and characteristic mental depression usually disappear within twenty-four hours, the buboes shrink, and the ulcers, if they are present, start healing. Pain in buboes and pain in initial lesions diminishes promptly. The favorable changes are noticeable, and usually strikingly so, within the first day. Early treatment at a time when the primary lesion is a papule prevents its ulceration. A trifle perhaps, but it betrays the amazing effect of streptomycin in this disease, and it prevents much pyogenic secondary infection of ulcerated lesions which in turn contributes significantly to ultimate suppuration of regional buboes.

The overall effects on the disease may be shown by the results obtained in a group of 83 patients, of whom 2 died.

Table 1 shows that the constitution of the treated group is a proper one for comparison with data from untreated patients or from

TABLE 2

COMPARISON OF MEANS FROM CONTROL AND HYPERIMMUNE SERUM TREATED GROUPS WITH AVERAGES FOR STREPTOMYCIN TREATED GROUP

		UNTREATED N = 542	HYPERIMMUNE SERUM N = 54	STREPTOMYCIN N = 81
Duration of				
Disease	Months	3.78	2.15	1.95
Disability	Months	3.12	1.87	1.96
Adenopathy	Months	3.50	1.78	1.59
Fever	Days	30.6	28.9	26
Bedridden	Days	46.8	23.3	23
Primary lesions	Days	40.6	30.9	24
Day of disease therapy started			17	20
Suppurative adenitis, per cent		56	26.5	27.7
Mortality, per cent		6	3.3	2.4
Therapy-to-recovery interval	Days		46	39

patients treated by other agents. The typhoidal clinical type normally has a fatality rate that is three times as high as the rate of the combined bubonic types. The mortality from any clinical type is increased by an increase in the frequency of pneumonia for that type. Since the treated group contained an unusually high incidence of the typhoidal type, and since the pneumonia rates were higher than normal for all types, it is clear that the group is highly selected with respect to severity of the disease and that significant modification of its mortality and morbidity constants could be expected only from an efficient therapeutic agent.

In Table 2 are shown the morbidity constants that are useful in a statistical study of this infection, those for the streptomycin treated group in comparison with those from 542 untreated patients selected at random and those from 54 patients who were treated with hyperimmune serum. Both therapeutic agents modified significantly most of these constants, streptomycin definitely more so than hyperimmune serum even though it was administered three days later in the disease.

The frequency of suppurative adenitis, one of the main causes for prolonged disability, was halved by therapy. This is perhaps all that could be expected from therapy that was initiated as late as the twentieth day of disease. By this time many regional buboes have already undergone partial liquefaction necrosis. The therapy-to-recovery interval is notably less in the streptomycin treated group. This interval is the time that elapses between administration of a therapeutic agent and the time at which the patient resumes full time work without subsequent disability. Whenever small groups of treated patients with a disease that is highly variable are to be compared it is often a fairer test to use the therapy-to-recovery intervals rather than to use the full list of aspects of morbidity.

A MORE extended comparison of therapy-to-recovery intervals is shown in Figure 1. Much of the history of experimental therapy of tularemia is summarized in this chart. The upper seven lines show that during the years when serum therapy was under trial the mean duration of disease was progressively shortened as the mean day of disease on which therapy was started moved progressively back from the fifth week toward the onset of the disease. Nevertheless, although the duration of disease was shortened to three-fifths of that of the control group, the therapy-to-recovery intervals remained essentially unchanged, at a duration of 56 ± 4 days. It is assumed that this interval represents the time required by the patient for pathologic lesions to heal and for abnormal physiologic changes to revert to normal.

The first break in the constancy of the convalescent period was caused by hyperimmune serum, which was a better bacteriostatic agent

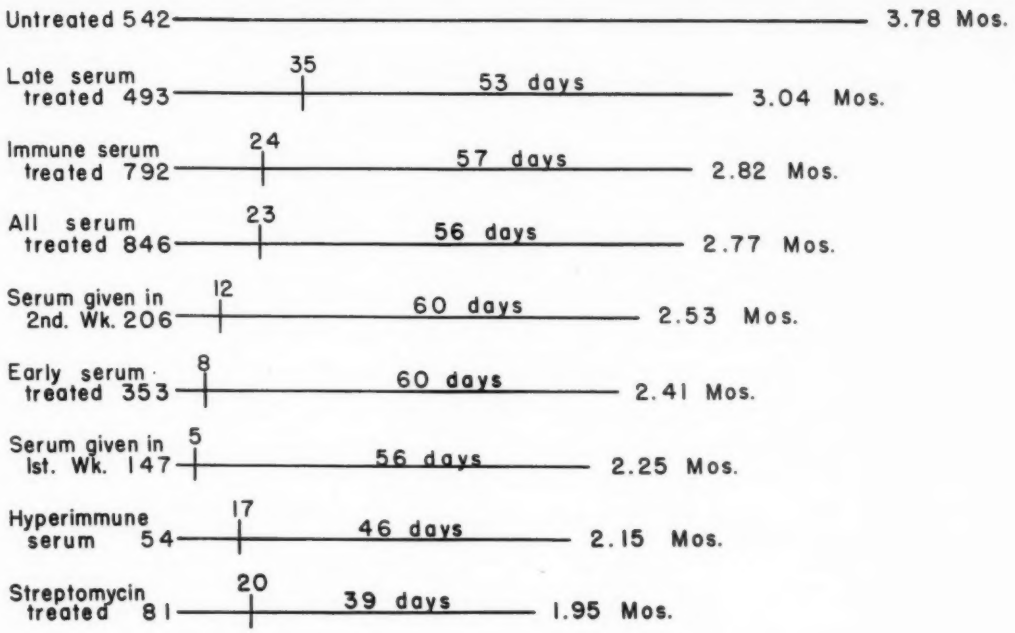


Figure 1. Each line represents the mean duration of disease of its labeled group. The vertical lines and numerals indicate for the treated groups the mean day of disease on which therapy was initiated. The portion of each line that lies to the right of the vertical line represents the therapy-to-recovery interval in days.

than the previously used immune serum. The interval was shortened even though therapy was initiated at the middle of the third week. Streptomycin caused a still greater reduction in the therapy-to-recovery interval and, in addition, reduced the mean duration of disease to less than two months, even though it was first administered at the end of the third week. The much greater efficacy of streptomycin probably indicates that it is not only a much more effective bacteriostatic agent than is hyperimmune serum, but that it is also to some extent bactericidal.

One of the difficulties that may be encountered in the treatment of tularemia patients with streptomycin is traceable to the fact that the treatment is highly effective. This difficulty occurs only when streptomycin is administered to patients with extensive pulmonary or serosal exudates. It does not occur if such lesions are of small size, or if they are absent. Tularemic exudates, especially pulmonary ones, are heavily laden with actively phagocytic macrophage cells and countless numbers of bacteria. All that is needed to initiate active phagocytosis and digestion of the bacteria is the presence of a highly effective bacteriostatic agent that does not impair the activity of the body cells. This occurs when the streptomycin concentration reaches a bacteriostatic level.

The consequences of this rapid killing of large numbers of bacteria are either an accentuation of general symptoms of the disease caused by the sudden access of some soluble bacterial products into the circulation, or the analogue of the Herxheimer reaction that is produced by effective treponemacidal therapy when it is administered during a stage of wide

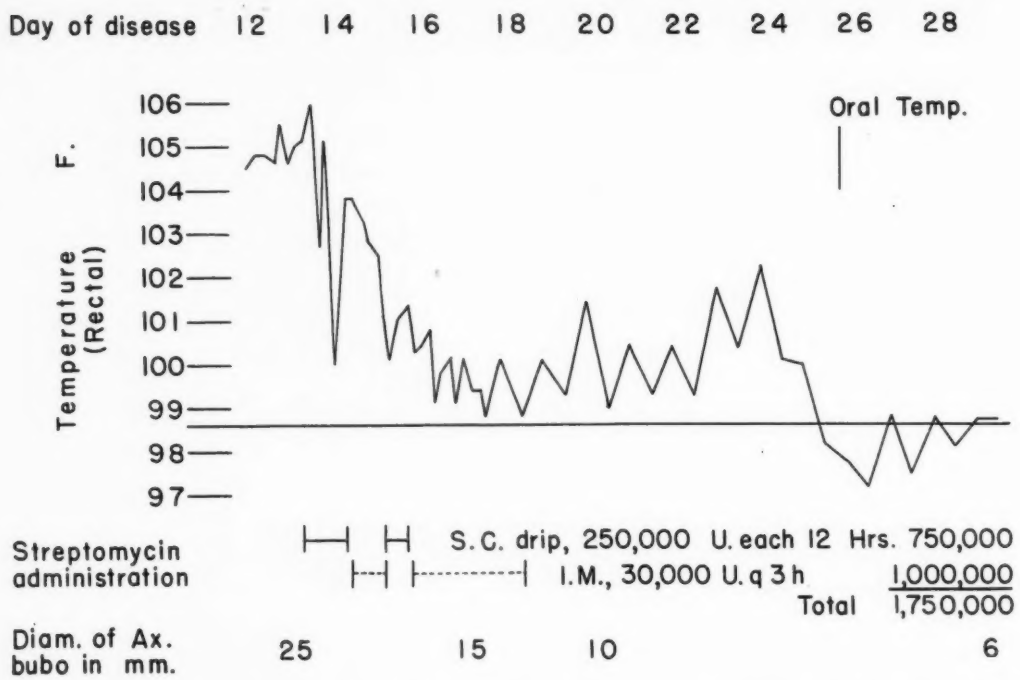


Figure 2. The effect of streptomycin administration on the temperature curve and on the bubo of a desperately ill, comatose man with bilateral tularemic pneumonia. Note the prompt fall in temperature and the shrinkage in size of the node, characteristic features of effective treatment. The recurrent fever, from the seventeenth to the twenty-fifth days of disease, bore no relation to the steady improvement that was observed daily in every other aspect. On the day that the temperature fell abruptly to normal we obtained the first x-ray evidence of resolution of the pulmonary exudates, and it is most probable that this fever was caused by absorption of soluble bacterial products made available by the rapid killing and digestion of the bacteria in the exudates.

(Reprinted with permission from Foshay, L.: A comparative study of the treatment of tularemia with immune serum, hyperimmune serum and streptomycin. Am. J. Med. 1:180-188, 1946.)

dissemination of the parasites in the presence of specific antibody formation. In tularemia these reactions have usually consisted of a brief exacerbation of fever, mild constitutional symptoms, a fall in temperature to about normal with a marked amelioration of all symptoms that lasts from four to six days, then a recurrence of irregular fever with daily peaks averaging 102° F. or thereabouts that endures for eight to fourteen days, usually terminating abruptly. This recurrent fever appears after streptomycin administration has been discontinued so there is no question of drug fever, but occasionally it is misinterpreted as a result of a therapeutic failure, a release from the beneficial effects of streptomycin, and consequently as an indication for additional and energetic streptomycin administration.

In the presence of large infected exudates, such as those of tularemic peritonitis, the exacerbation of constitutional symptoms may be more severe, including higher fever, mental dullness, drowsiness, or even a semicomatose state. There is danger that this type of severe reaction may be misinterpreted as one due to streptomycin toxicity, since it may appear soon after initiation of therapy. The post-therapeutic, recurrent fever cannot be altered in degree

or in duration by any form of therapy, and its disappearance often coincides with the first obtainable evidence of resolution of the large exudate. The most complete available exposition of the cause of this reaction is in the clinical chart of Cohen and Lasser's patient,[1] a desperately ill man with a large tularemic pneumonia. Upon admission this man showed a sustained, nonremittent fever at a high level and disorientation and stupor, a combination that constitutes the worst prognostic sign in tularemia. Careful examination of this chart shows that the dramatic, favorable changes accomplished by streptomycin were all effected at an administration rate of 0.5 gm. per day, and no convincing evidence that subsequent administration at a higher rate added anything of value. It also reveals that coincident with the onset of recurrent fever the serum agglutinin titers *fell,* indicating clearly an *in vivo* antibody absorption. This could be caused only by the release of a large amount of soluble bacterial antigenic material into the circulation.

The source of so much antigenic material in a person abruptly transferred into the recovery, or antibody, phase of the infection, could only be the bacteria in the large exudate, now subjected to accelerated phagocytosis and digestion as a consequence of streptomycin effect. Drs. Cohen and Lasser correctly interpreted the events and did not give extra streptomycin. Indeed, if attention is focused on the condition of the patient rather than on the clinical chart, it is usual to observe that despite recurrence of fever the patient improves steadily day by day.

Figure 2 illustrates the effect of streptomycin therapy in a desperately ill patient at the Cincinnati General Hospital from whom we tried to learn how much streptomycin is enough. The man was known to have had pneumonia for six days, and had been semicomatose for that period. He had bilateral tularemic pneumonia on admission. Note the sustained high fever during the first two hospital days. We have never observed a spontaneous recovery in any patient with these findings. Streptomycin administered by subcutaneous drip at the rate of 0.5 gm. per day for one day brought the rectal temperature down from 106° to 100° F. and restored the patient to a somnolent but easily arousable and rational state. The change to intramuscular administration at a rate of slightly less thn 0.25 gm. per day caused the temperature to rise again and the patient to lapse into a deep stupor. Reversion to 0.5 gm. per day for just one-half day again rendered him essentially afebrile and mentally rational. From then on resubstitution of intramuscular administration at the rate of 0.24 gm. per day sustained the clinical gains quite satisfactorily.

It is probable that no sicker tularemia patient has been treated successfully, yet you will note that the total amount of streptomycin administered was only 1.75 gm. However, it is conceivable that one might encounter a patient who was farther along toward that point at which all pathologic-physiologic changes become irreversible, and it is possible that a larger dosage of the drug might be necessary.

In the treated series, streptomycin dosage varied from 0.64 to 42 gm. per patient. There is obviously much wasteful use of it. It seems probable that no dosage greater than 6 gm. per patient could be justified by any available experience or knowledge, and that 2 to 3 gm. per patient is probably adequate dosage for the great majority of patients. Certainly there is yet no valid evidence that 0.5 gm. per day for two days, followed by 0.25 per day for four days, a total of 2 gm.; or that 0.5 gm. daily for six days, a total of 3 gm., is not sufficient for most patients. We probably have not had collectively enough experience to justify any hard and fast rules. Nevertheless, since streptomycin in moderate dosage can cause prolonged or permanent tinnitus, vertigo, or deafness, due to the unfortunate vulnerability of the eighth cranial nerve, it would seem wisest to use always the least amount that is wholly adequate for the clinical need.

REFERENCE

[1]Cohen, R. B., and Lasser, R.: Primary tularemic pneumonia treated with streptomycin. J.A.M.A. 131:1126-27 (August 3) 1946.

DIAGNOSTIC CLINIC

Differential Diagnosis and Treatment of Arthritis

RALPH A. KINSELLA*

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, ST. LOUIS

FIVE YEARS ago I had the pleasure of speaking to this Assembly on the same subject. At that time the treatment of rheumatoid arthritis with gold was being popularized, but there were still a great many uncertainties and disadvantages in the treatment, some of them resulting from the enthusiasm with which patients were treated and consequently overtreated. In the five years that have passed considerable experience has been accumulated, and a body of opinion is being formed concerning this method. It is not the perfect treatment. All cases do not respond favorably, but in contrast to the preceding period when no treatment was successful, patients can be assured now that in a large number of cases improvement will take place, and if the patients are treated early enough even permanent remission may be expected.

The etiology of this disease remains obscure. Thinking has changed somewhat, so that rheumatoid arthritis is now included in the list of those diseases which are characterized by the alteration and disturbance of collagen. Collagen is a ground substance in connective tissue, and certain kinds of disease entities in which the process of allergy is known or suspected to exist show this alteration of collagen and, subsequently, other surrounding cellular changes differing with the different diseases.

This concept has been adequately elaborated by several writers in the last ten years. Klemperer, Pollack and Baehr have written very clearly about the subject, and the correlation of all these diseases into one concept has been well described by Rich.

A consideration of the different diseases that are included in this classification may give some idea as to the adequacy of certain kinds of treatment. This list includes serum sickness, acute rheumatic fever of the typical variety, and also the rare variety that is not characterized by cardiac disease, lupus erythematosus, periarteritis nodosa, dermatomyositis and psoriasis, fascitis, and finally rheumatoid arthritis. Here also there may be variants that are not clearly identified.

I should like to dismiss from discussion the great group of cases called osteoarthritis. I think this expression has contributed very little to the understanding of arthritis, and I think it would be just as well if we paid little or no attention to x-ray evidence or x-ray statements about osteoarthritis. You know about the person who comes to a doctor's office with a swol-

*Professor of Internal Medicine and Director of the Department, St. Louis University School of Medicine, St. Louis.

Presented before the meeting of the Interstate Postgraduate Medical Association of North America, St. Louis, Missouri, October 14 to 17, 1947.

len knee, an x-ray picture reveals spurs, and then the diagnosis of osteoarthritis is made. But if the healthy knee is photographed in the x-ray, the same spurs are seen, and the same spurs are seen all over the body. Thus osteoarthritis is not a disease and it is not an adequate explanation of the illness of patients. It might be in order for the expression to be reexamined and a substitute evolved.

Pains in the back, swollen knees, lame shoulders—all those disturbances which comprise the greatest number of cases in an arthritis clinic usually do not result from arthritis at all but from some orthopedic or mechanical disturbance and should have orthopedic treatment. The bad foot and the bad shoe are much more responsible for bad knees and bad backs than any disease process.

Rheumatoid arthritis is the chief form of chronic arthritis to be discussed because it is the most dangerous and most disabling form. From my experience with these patients and their doctors I feel that it is still necessary to emphasize the features which lead to the diagnosis. I think the word "rheumatoid" ought to be limited to a certain group of patients that have certain definite clinical features. In the first place, the disease occurs early in a person's life. Most of the cases develop rheumatoid arthritis when comparatively young in years, in the twenties or thirties; in childhood the counterpart is Still's disease. Practically every patient who is examined for rheumatoid arthritis for the first time during his fifth decade is found to have had an insidious onset dating back into his twenties or thirties. The disease seems to have a predilection for women. Most of the cases undoubtedly are found in women, but the disease is not uncommon in men.

The mode of onset is different from that of any other kind of chronic arthritis. It is insidious, it is indefinite. A pain may exist in a wrist for months or even years intermittently without exciting much attention or producing enough evidence to yield a positive diagnosis. In other cases the advance of the disease is more definite and rapid, and once a single joint becomes swollen and painful only a few months will elapse before many joints are affected in a similar manner.

RALPH A KINSELLA

The disease is definitely not associated with any recognizable disturbance in endocrine function or with any recognized infective process. There is no connection between teeth, tonsils, and sinus and rheumatoid arthritis.

The disease further characterizes itself by spreading to the smaller joints. In the literature of the last twenty or twenty-five years this fact has been emphasized, and the expression "spindle finger" or "fusiform finger" has been used to describe it. The process characteristically involves the middle knuckle of the finger and spares the last joint of the finger. This gives the finger a swollen middle, or a fusiform or spindle shape. It is a curiously valuable sign for the recognition of this type of rheumatoid arthritis. Other forms of chronic rheumatism may involve the fingers, but they do so in a different way, as I shall point out.

These swellings are what might be called pale cold swellings. They consist of painful, puffy areas around the wrist, the middle joint of the finger is swollen, but it is neither red nor hot, and it is tender and painful. You know the rest of the picture—the spreading disability, the pain on movement, the difficulty the patient has in making a living.

The introduction of gold in the treatment of this disease has been extremely valuable. In the beginning gold was used in excessive amounts and many unfavorable results took place. The experience of the last ten years has brought the treatment with gold to a point where it is safe, and complications are extremely rare. This treatment consists of giving gold in 50 mg. doses of a recognized gold salt, such as myochrysine, once a week. This treatment is usually and arbitrarily continued for twenty weeks and then the patient is allowed a rest period. The rest period may have grown out of the fact that in the early days when greater doses were used the patient at the end of twenty weeks would show frightening complications. Now, however, it is thought that, with smaller doses being used, there should not be any real rest period in which no gold is used; instead, the present trend is to give gold every two weeks for two to three months and then to resume the weekly program.

There is no question about the value of this treatment in many cases of rheumatoid arthritis. Not all cases are cured by any means. Experience will differ, depending on the clinic which reports the use of this treatment. For example, if a clinic is in a position to see patients only for a few months and if the treatment cannot be controlled over a long period of time, relapses are so common that it is easy to form the opinion that the treatment may be a total failure in some cases.

I think it is important that even when patients do not seem to improve after a year, the treatment should not be abandoned, because improvement may come at a much later date, even two years after the beginning of treatment. This, of course, has a tendency to weaken the argument for the use of gold, but it is a fact that some patients, particularly those who have had arthritis for eight to ten years before treatment has started, will be very slow to show improvement. On the other hand, if the patient presents himself within a month or two after the onset of painful swellings in small joints, then some very surprising improvements occur. Undoubtedly the best results are seen in those cases where treatment can be started soon after the onset. However, the average patient, I think, does not present himself for treatment for at least a year after the onset, because of the indefinite and slowly progressive character of the disease.

THE COMPLICATIONS that come from using gold are not as numerous or serious today as they used to be. At the rate at which gold is now used a patient rarely has anything more serious than an itch with a very faint eruption on the flexor surfaces, and this is not a sufficient reason for discontinuing the treatment. Benadryl will relieve this itch. There have been reports in the literature for the last two or three years from some clinics on the effects of BAL, the British anti-lewisite material which was evolved for the treatment of arsenic and mercury poisoning, in those patients in whom more serious complications from the use of gold have developed. In a recent number of the *Annals of Internal Medicine* this subject is reviewed, and it is apparent that in some cases of severe heavy metal poisoning following the use of gold and the use of larger doses of gold, BAL may be effective in completely removing any dangerous threat to the patient.

I have had no opportunity myself in the last two years to see a patient whose complication was serious enough to consider the use of this material, and I think it has been used, in the reports to date, in patients who need not have had any such treatment.

The most remarkable complication that I personally have seen was in a young woman who had had all the clinical features of rheumatoid arthritis for several months before presenting herself. After two injections of 50 mg.

of gold she developed universal adenopathy with a high fever and was hospitalized. She was studied for a possible infectious mononucleosis, a diagnosis that could never be established. Aften ten days the fever subsided, the enlarged glands returned to normal size, and all the features of rheumatoid arthritis disappeared. She has been free of symptoms for the fourteen months since her discharge from the hospital. If we could unearth the reasons for her recovery, we might develop a treatment for rheumatoid arthritis which is better than gold therapy.

I think there is another form of chronic rheumatism that is important in the practice of all of us. I think you and I see such a patient about once a year. This patient is definitely in the past-middle-age group. The sex is almost always male, about five males to one female in my short series of 15 patients.

The mode of onset is different. It is much more rapid, it is abrupt, and the disability is quick to be established. The large joints, and the hands as well are involved. Many of these cases are called rheumatoid arthritis when in reality they must represent an entirely different process. Some of these patients have had definite infections active in the body at the time. In several of the males, active urinary tract infection was present, but many of the patients had no discoverable infection. Whether or not infection has anything to do with this type of patient is difficult to state.

The difference between the hand of this patient and the hand of the rheumatoid arthritis patient is diagnostic. The rheumatoid arthritis patient has one or more spindle-shaped fingers, interosseous atrophy, and a bulky wrist, whereas the patient with this other kind of prolonged inflammatory rheumatism has a helpless hand that is immobile because the total hand is occupied in a dull red, tender uniform swelling. There is no tendency to localization at any one point, but the entire hand is swollen and slightly reddened. The onset is characterized by fever, and the fever may be as high as 102° in the first week.

These patients may let a long time elapse before being properly treated; they may wait a year. Some of the patients undoubtedly get well without any particular treatment. The injection of vitamins (which appears to be inevitable), the use of any antibiotic or sulfa drug (also inevitable procedures), may have something to do with the recovery of some of these patients, but such procedures undoubtedly had nothing to do with the recovery of a great many.

To revert for a moment to the classification of those diseases characterized by disturbance of collagen, you will recall that one of the diseases listed was lupus erythematosus, a disease whose history lies in the literature of dermatology. Far back in the literature on that disease two agents were stressed as useful in treatment, gold and bismuth. The emergence at this late date of a classification which places rheumatoid arthritis in a group with lupus erythematosus is doubly interesting since gold has also been developed as one of the treatments of rheumatoid arthritis.

In the other type of case that is clinically different from rheumatoid arthritis, there is no doubt, it seems to me, that bismuth is an extremely valuable agent, and weekly injections of bismuth usually cause an improvement in four or five weeks.

I have had the opportunity of treating two such patients with gold and have had equally beneficial effects. These patients get well, and if added to any one series of rheumatoid arthritis cases would certainly improve statistics. I am not absolutely sure that they would not all get well with a residue of stiffness and some deformity if they had no special treatment whatever, because some of them undoubtedly have done so, but it seems to me that the process of recovery is accelerated, even initiated, by the use of bismuth and possibly, if we knew more about it, by the use of gold.

Finally, one sees at times patients with pains and stiffness who do not fall into one of these common categories, patients who have what might be called fasciitis. These cases are char-

acterized by painful stiffness of the panniculus, the subcutaneous tissue, by contractures of the palmar tendons or of all the tendons, and by tenderness of the flesh when pressed upon. There is no particular tendency toward involvement of the joints.

Such a case suggests both scleroderma and dermatomyositis, particularly if there are skin manifestations; many of these cases resemble scleroderma or dermatomyositis but do not have the superficial manifestations of those two diseases. In two such patients gold has been definitely helpful in relieving the symptoms. Those were not cases called *scleroderma,* for which so far I think we have no real treatment.

Finally a word about the physical examination of the patient. I would like to repeat that it ought to be a routine practice of doctors to examine patients from the feet up instead of from the head down. Instead of the ordinary routine that you see of taking out the light and looking at the pupils, every patient should disrobe, including shoes and socks, and the examination begun at the feet, not only for the purpose of examining the arteries of the feet, which is extremely important, but also for the purpose of examining the feet, the bones, and the posture of the foot itself. In that way I believe we could recognize the origin of many complaints referable to joints that are called arthritis. Painful and swollen knees, pain in the neighborhood of the groin radiating to the back of the iliac crest, pains in the area of the sacroiliac, pains as high as the base of the skull, all these might at times be explained on the basis of faulty weight-bearing and identified much more often if the doctor used the routine method of beginning his physical examination at the feet. It is a practice that will repay you many times in satisfactory diagnoses and highly satisfactory treatment, because corrective measures in the shape of shoes or orthopedic correction will bring about recovery of these patients in many instances.

NAVAL AIR RESERVE NEEDS DOCTORS

Doctors who served in the Navy during the past war and who still hold reserve commissions are requested to apply for two-weeks annual training duty or up to five months extended duty at Naval Air Stations, it was announced by Rear Admiral Richard F. Whitehead, USN, Chief of Naval Air Reserve Training.

Naval Reserve Medical Officers who can possibly spare the time are urged to apply for this duty to help alleviate the work-load at those stations which are under-manned. Applications are made via the Commanding Officer of the Air Station to the Commandant of the Naval District concerned. The following Naval Air Stations need assistance: NAS Akron, NAS Atlanta, NAS Columbus, NAS Dallas, NAS Denver, NAS Glenview, NAS Grosse Ile, NAS Los Alamitos, NAS Memphis, NAS Miami, NAS Minneapolis, NAS New Orleans, NAS New York, NAS Oakland, NAS Olathe, NAS Squantum, NAS St. Louis, NAS Willow Grove, NAResTraUnit, Anacostia, D.C., NAResTraUnit, Jacksonville, NAResTraUnit, Norfolk, NAResTraUnit, Seattle, NAResTraUnit, Lakehurst.

Congenital Anomalies of the Heart and Great Vessels

Clinicopathologic Study of 132 Cases

Part II

T. J. Dry · J. E. Edwards · R. L. Parker
H. B. Burchell · H. M. Rogers
and
A. H. Bulbulian

MAYO CLINIC
ROCHESTER, MINNESOTA

FOREWORD

The Editors of *Postgraduate Medicine* are pleased to present the second and concluding installment of the exhibit on Congenital Anomalies of the Heart, of which Part I appeared in the September issue of this journal.

Originally shown at the centennial meeting of the American Medical Association in Atlantic City in June, 1947, the exhibit has been amplified by the addition of reproductions of portraits of pioneer investigators in the field of congenital heart disease. The authors have also studied additional cases and have modified their data in respect to the incidence of the various types of anomalies accordingly. Apart from these additions and changes, the material presented here is essentially that included in the original exhibit.

For the sake of completeness, the authors would like to have included a presentation of such anomalies as congenital subaortic stenosis, anomalous opening of the pulmonary veins into the right auricle and an anomalous origin of a coronary artery. Specimens of such anomalies, however, were not available in their pathologic material.

Tetralogy of Fallot

(Pulmonary Stenosis, with Narrow Pulmonary Artery, Ventricular Septal Defect and Dextroposition of Aorta)

ETIENNE-LOUIS ARTHUR FALLOT

1850-1911

In 1888 Fallot wrote "Until now clinicians have considered the diagnosis of anatomic lesions of morbus caeruleus of almost unsurmountable difficulty." Although the combination of lesions known as the "tetralogy of Fallot" had been recognized as an anatomic entity more than 100 years before, it took the next 50 years for the medical profession to appreciate the fact that this meticulous physician had paved the way for the accurate selection of cyanotic patients who might, years later, be benefited through surgical intervention.

Tetralogy of Fallot

(Pulmonary Stenosis, with Narrow Pulmonary Artery, Ventricular Septal Defect and Dextroposition of Aorta)

IN THIS heart the aorta arises from both ventricles and straddles a defect of the membranous portion of the ventricular septum. In contrast to the dilatation of the pulmonary artery in the Eisenmenger complex, the pulmonary artery in this condition is narrow, and there is a stenotic subpulmonic "third ventricle." The right ventricular wall is thick.

Fig. 41—Anterior view (model x1). (1) Narrow pulmonary artery. (2) Wide aorta. (3) Large right ventricle.

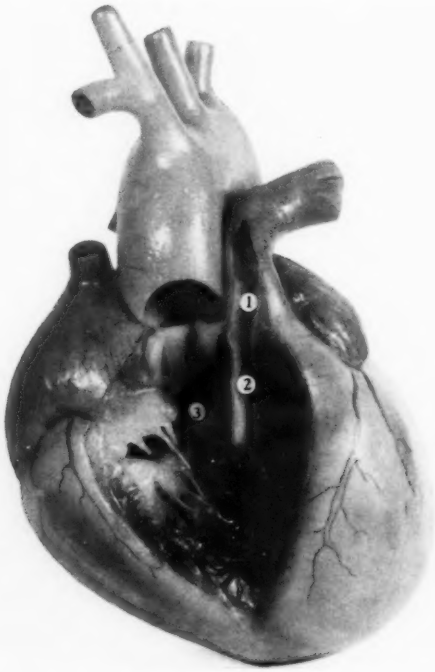


Fig. 42—Interior of right ventricle (model x1). (1) Narrow pulmonary artery. (2) Subpulmonic "third ventricle." (3) Ventricular septal defect.

History of the Patient

BOY, 7 years old with increasing cyanosis since three days after birth, and very limited tolerance of exercise. Intense cyanosis, clubbing of fingers and toes, and a soft precordial systolic murmur were present. Roentgenogram showed heart not enlarged, with classic concavity of left border. Hilar markings prominent, but no hilar pulsation noted roentgenoscopically. Marked right axis deviation. Hemoglobin, 24 gm. per 100 cc. blood; erythrocytes, 8,800,000 per cu. mm.; hematocrit, 86 per cent; arterial oxygen saturation, 65 per cent.

Principal Clinical Features of this Anomaly

1. Early cyanosis (low oxygen saturation of hemoglobin in arterial blood). 2. Paroxysmal unconsciousness, with dyspnea and cyanosis, a prominent feature in some cases. 3. Usually, a systolic murmur varying markedly in intensity from case to case. 4. Clubbing of fingers and toes and polycythemia. 5. Subnormal pulmonary arterial flow. 6. Abscess of brain or cerebrovascular thrombosis occasionally the cause of death. 7. Roentgenologic aspects: usually, heart is not enlarged; pulmonary conus shadow is absent, right ventricle is prominent and hilar pulsations absent. Right aortic arch not infrequently found. 8. Electrocardiogram: marked right axis deviation.

Incidence in this Series—Eleven patients; ages ranged from 22 days to 23 years.

Fig. 43—Interior of the right ventricle. Specimen from which models shown in figures 41 and 42 were prepared.

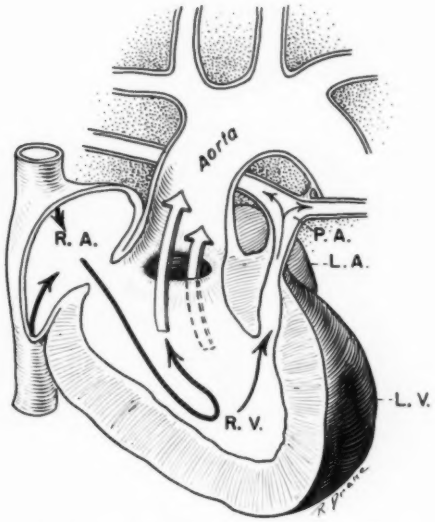


Fig. 44—Diagram of intracardiac circulation in tetralogy of Fallot.

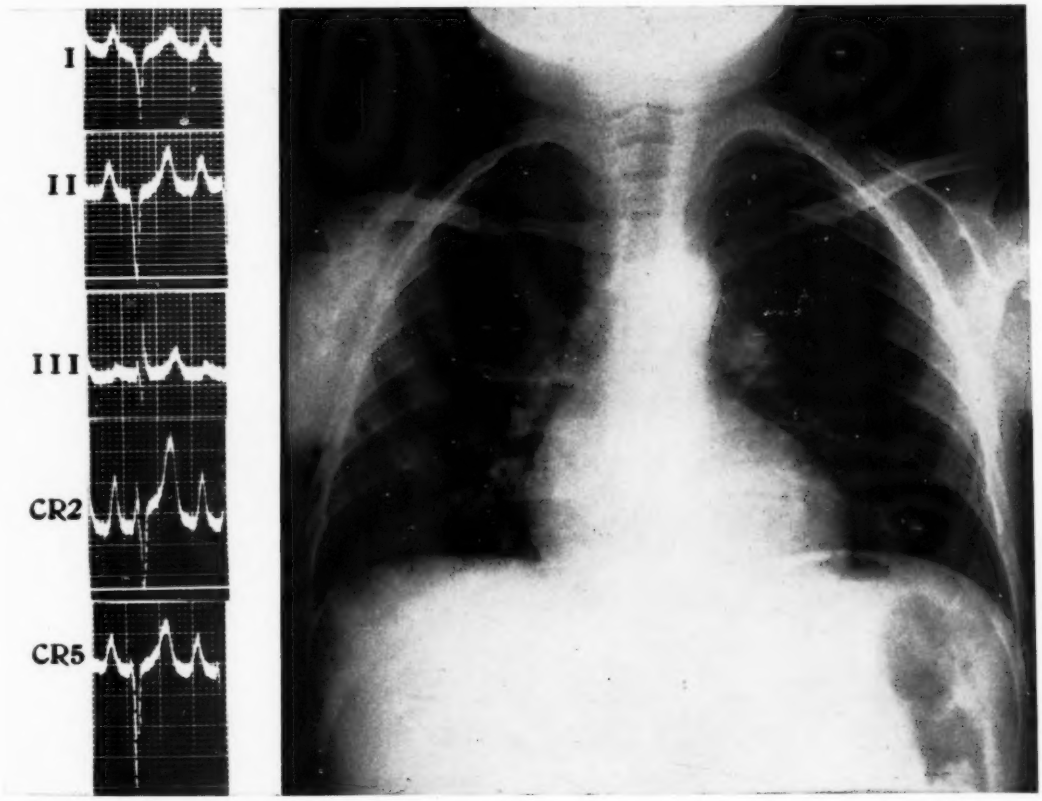
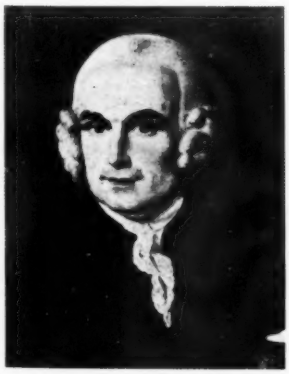


Fig. 45—Electrocardiogram and thoracic roentgenogram of the patient whose heart is illustrated in figures 41, 42, 43 and 44.

Tetralogy of Fallot

(Pulmonary Stenosis with Relatively Wide Pulmonary Artery, Ventricular Septal Defect with Dextroposition of Aorta)



EDUARD SANDIFORT

1742-1814

Eduard Sandifort, professor of surgery, anatomy and medicine at the University of Leyden in the late eighteenth century, is known as the father of pathologic iconography. He has given a very clear description of the cardiac defects now known as the "tetralogy of Fallot." His classic description of how the finger placed in the right ventricle readily appeared in the aorta should be employed as a standard demonstration in pathologic anatomy. Niels Stensen's anatomic description, however, antedated that of Sandifort by about 100 years.

Tetralogy of Fallot

(Pulmonary Stenosis with Relatively Wide Pulmonary Artery, Ventricular Septal Defect with Dextroposition of Aorta)

THIS heart is also the example of the tetralogy of Fallot, in spite of the relatively wide pulmonary artery, since there is stenosis at the level of the bicuspid pulmonary valve. A "third ventricle" is also present which contributes to pulmonary stenosis.

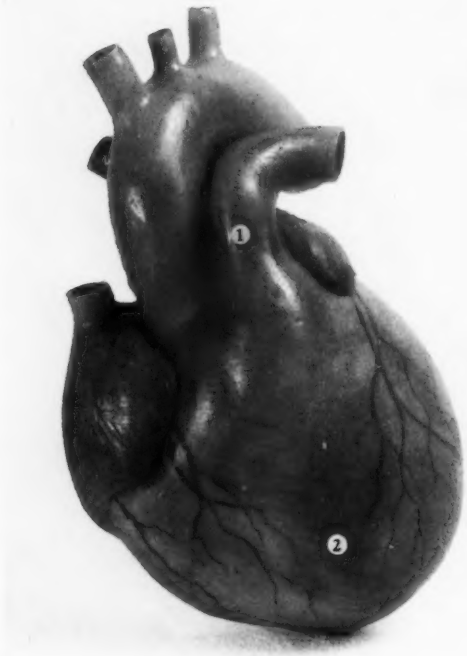


Fig. 46—Anterior view (model x1).
(1) Pulmonary artery. (2) Large right ventricle.

Fig. 47—Interior view of right ventricle and pulmonary artery (model x1).
(1) Stenotic bicuspid pulmonary valve. (2) Subpulmonic "third ventricle." (3) Ventricular septal defect.

History of the Patient

A BOY, 5 years old, of normal development, with progressive cyanosis since 3 years of age. Clubbing and mild polycythemia, as well as a loud precordial systolic murmur with thrill, were noted. Roentgenogram showed heart to be of normal size and contour, but decreased hilar markings. Electrocardiogram showed right axis deviation. The boy died of abscess of the brain.

Principal Clinical Features of this Anomaly **(see p. 36.)** These two examples, although they differ structurally and roentgenographically in regard to the size of the pulmonary arteries are, nevertheless, identical functionally. The caliber of the pulmonary artery may vary from moderate narrowing to atresia. When valvular stenosis is present, the pulmonary artery and the outflow tract may approach that of a normal heart, and it is this type of stenosis that may be associated with an intact ventricular septum and absence of cyanosis. Variation is found in the length of the subpulmonic, fibromuscular channel sometimes called the "third ventricle." This channel may be narrow throughout its length or it may exhibit stricture-like contractions at either end. The clinical features are largely dependent upon the reduced pulmonary blood flow. When the syndrome is associated with a right aortic arch, it has sometimes been called "Corvisart's disease." Wide bronchial arteries may carry a substantial amount of blood to the lungs in this condition.

Fig. 48—Interior of the right ventricle. Specimen from which models in figures 46 and 47 were prepared.

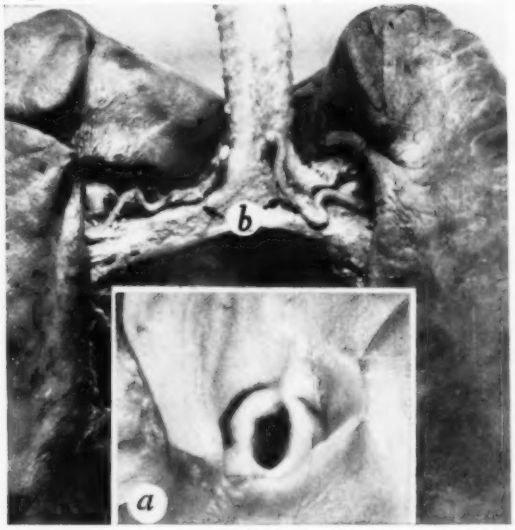


Fig. 49a—A stenotic bicuspid pulmonary valve in a case of tetralogy of Fallot; *b*—wide bronchial arteries in a case of tetralogy of Fallot.

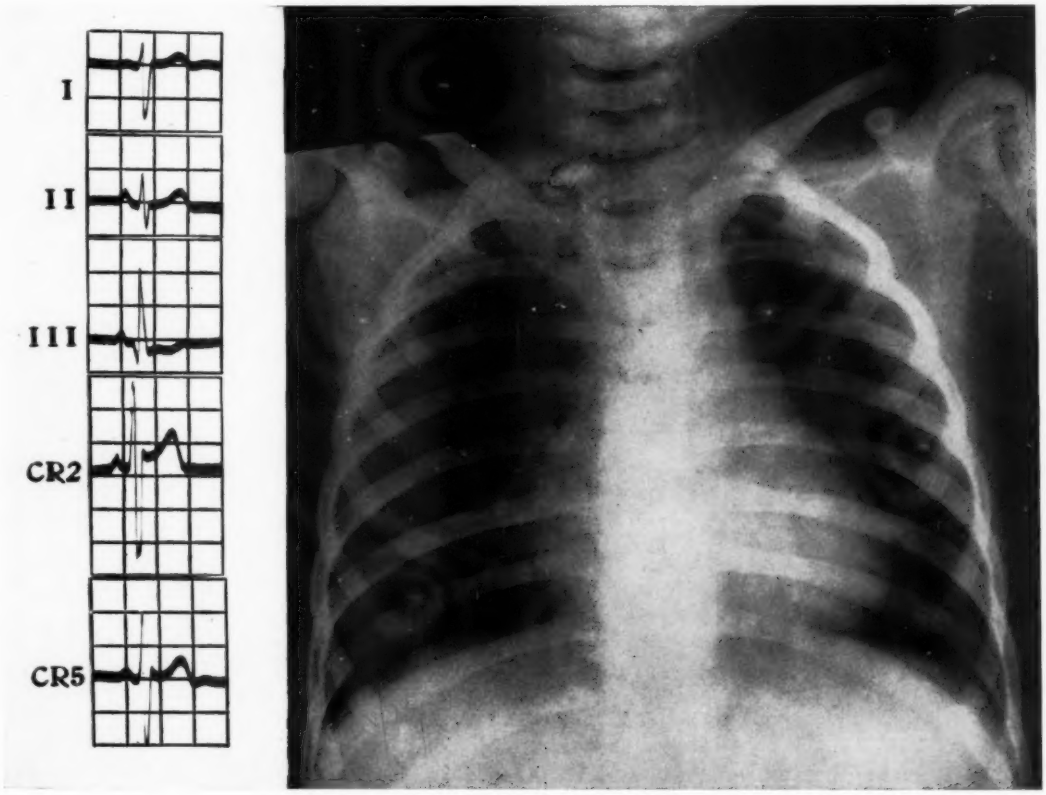


Fig. 50—Electrocardiogram and thoracic roentgenogram of the patient whose heart is illustrated in figures 46, 47 and 48.

Complete Transposition of the Great Vessels

KARL ROKITANSKY

1804-1878

In Rokitansky's study, "Die Defekte der Scheidewande des Herzens," 1875, the anomalies of the great vessels, the defects of the atrial and ventricular septa and the theories relative to the etiology of transposition are described. The illustrations of the various lesions are detailed and beautifully executed, and the engraving of the anatomic defects in what we call tetralogy of Fallot is especially excellent. In his study of the great vessels, published in 1852, the cases of patent ductus arteriosus have an excellent clinicopathologic correlation, the clinical findings often being those of his contemporary and friend, Skoda.

Complete Transposition of the Great Vessels

IN THIS anomaly the aorta arises from the right ventricle and the pulmonary artery from the left ventricle. A defect of the membranous portion of the ventricular septum is present in this specimen. The foramen ovale and the ductus arteriosus are patent.

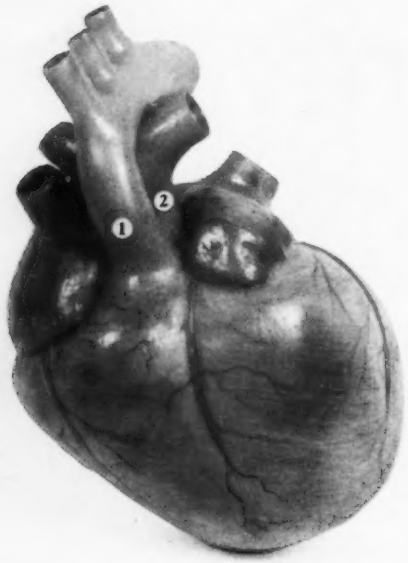


Fig. 51—Anterior view (model x1).
(1) Aorta situated anterior to (2) pulmonary artery.

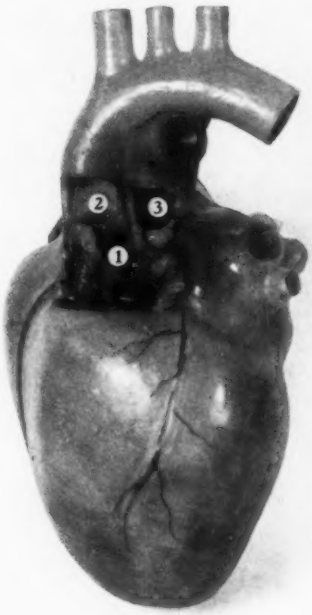


Fig. 52—Left lateral view (model x1).
(1) Ventricular septal defect. (2) Aorta arising from right ventricle. (3) Pulmonary artery arising from left ventricle.

History of the Patient

A FEMALE, 2 months old, had had intense cyanosis at birth, which disappeared. Intermittent cyanosis recurred at 5 weeks. The patient was hospitalized for "pneumonia" at 2 months. Cyanosis and dyspnea increased, with evidence of congestive heart failure. A systolic murmur over the precordium and interscapular area was noted. Roentgenograms of the thorax showed globular cardiac enlargement, with abnormally narrow shadows of the great vessels in this plane. Electrocardiogram showed high voltage biphasic QRS complexes. Progressive respiratory embarrassment and death ensued.

Principal Clinical Features of the Anomaly

1. Cyanosis, onset at birth, severe and progressive.
2. Usually, death in early infancy, condition not compatible with adult life.
3. Progressive cardiac enlargement.
4. Variable systolic murmur.
5. Roentgenologic aspects: usually, right ventricular enlargement, globular configuration, aorta anterior to pulmonary trunk.
6. Electrocardiogram: usually, right axis deviation; occasionally, left axis deviation.

Incidence in this Series

Nine patients, of whom 7 did not survive beyond the fourth month. One survived to the age of 7 months; 1 other to the age of 8 months.

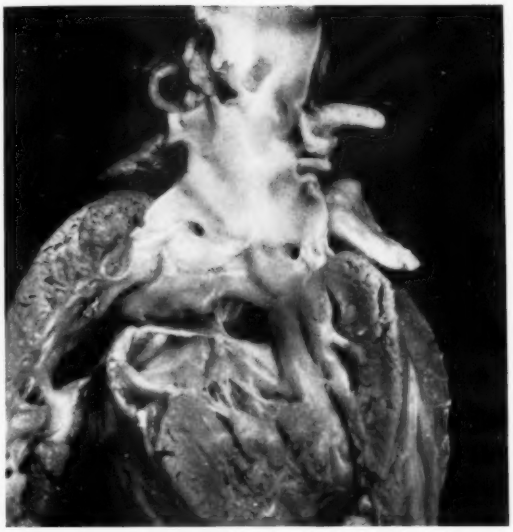


Fig. 53—Specimen from which models shown in figures 51 and 52 were prepared. Interior of the right ventricle and aorta.

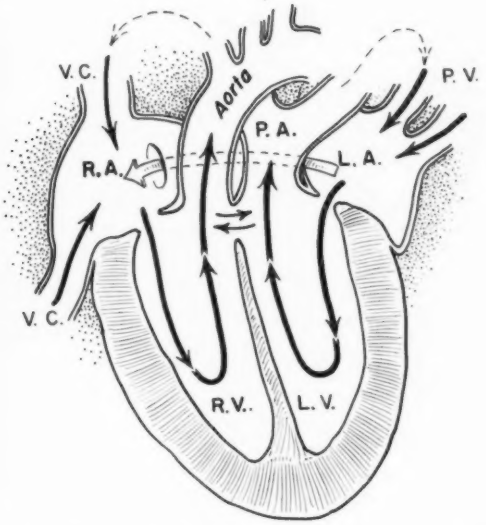


Fig. 54—Diagram of intracardiac circulation in complete transposition of great vessels with ventricular septal defect.

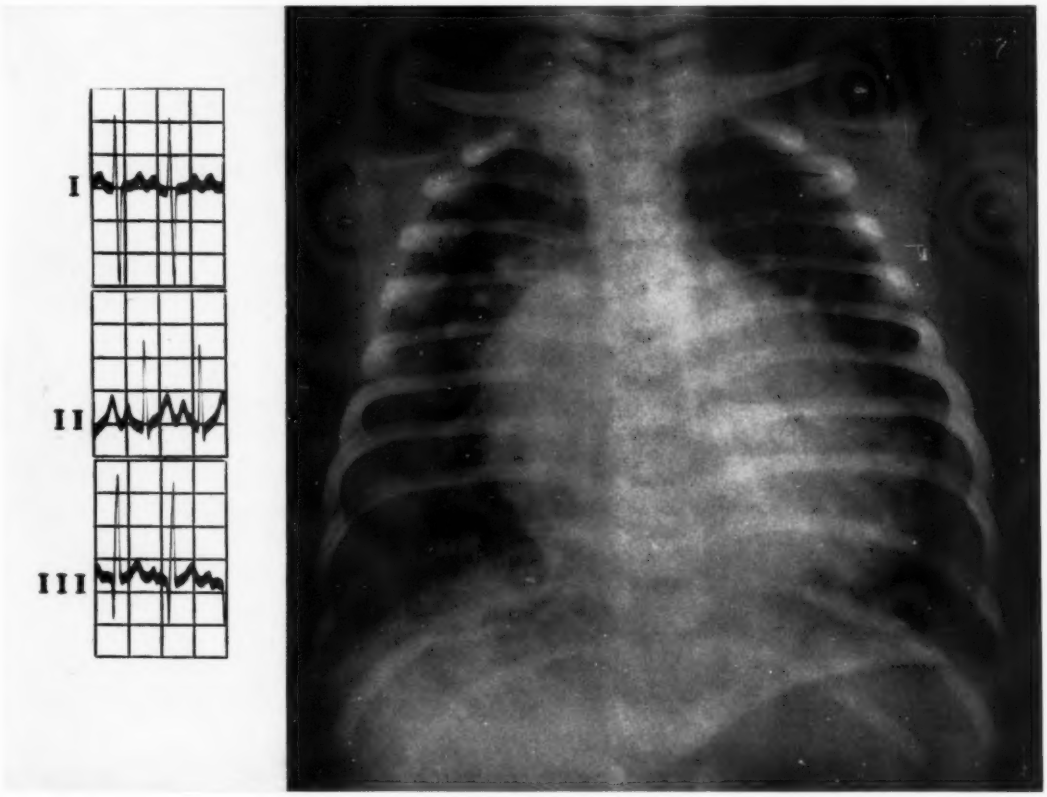
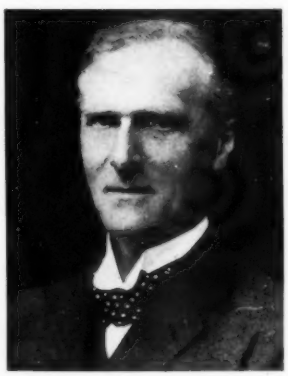


Fig. 55—Electrocardiogram and thoracic roentgenogram of the patient whose heart is illustrated in figures 51, 52, 53 and 54.

Persistent Truncus Arteriosus



SIR ARTHUR KEITH

1866-

For many years Sir Arthur Keith pursued his studies on congenital cardiac disease, mainly from the embryologic viewpoint. His contributions to knowledge of the embryologic defects of the heart largely concern his observations on the normal and abnormal differentiation of the bulbus cordis. However, his researches were wide, encompassing anatomic and physiologic correlations. His descriptions of large bronchial vessels in a case of severe pulmonary stenosis are of special clinical interest.

Persistent Truncus Arteriosus

IN THIS heart a single arterial vessel, the persistent truncus arteriosus, arises from both ventricles, above a ventricular septal defect. An incomplete septum divides the upper portion of the truncus arteriosus into the aorta and a short pulmonary artery. No vestige of the ductus arteriosus is present in this specimen.

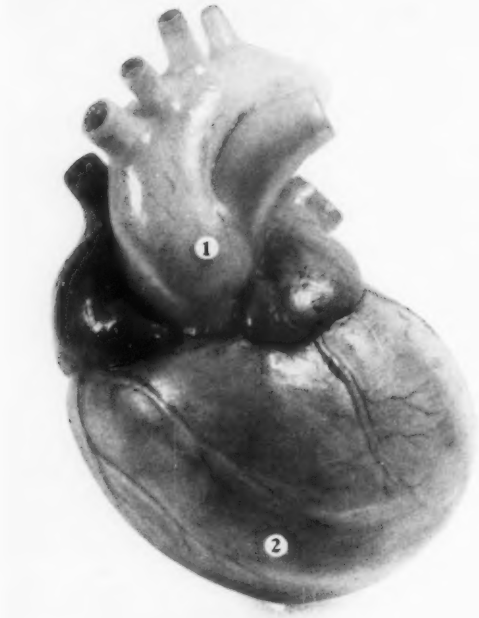


Fig. 56—Anterior view (model x1).
(1) Persistent truncus arteriosus. (2) Large right ventricle.

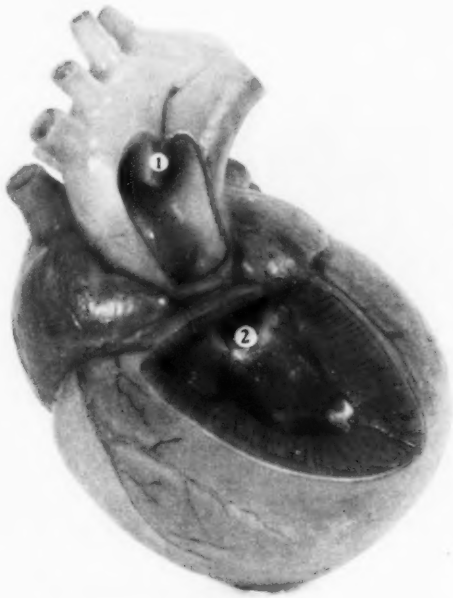


Fig. 57—Interior of truncus arteriosus and right ventricle (model x1).
(1) Incomplete truncus septum. (2) Ventricular septal defect below biventricular origin of persistent truncus arteriosus.

History of the Patient

IN A MALE, 8 months old, a systolic murmur was present after birth. There was feeding difficulty, with poor development. The patient was admitted one day before death. A loud systolic murmur was heard over the entire precordium; dyspnea and swelling of the hands and feet were noted; the liver was palpable but there was no cyanosis. The thoracic roentgenogram showed marked cardiac enlargement, with a narrow vascular shadow. The electrocardiogram showed right axis deviation. The infant died suddenly.

Principal Clinical Features of the Anomaly

1. Cyanosis, usually moderately severe, but occasionally absent. Oxygen saturation of arterial hemoglobin always below normal, the degree of desaturation depending on pulmonary blood flow and perhaps the effect, in some cases, of directional ejection from the ventricles.
2. Loud systolic murmur (ventricular septal defect).
3. Roentgenologic aspects: right and left ventricular enlargement. Increased pulsation of hilar shadows may be present, particularly when cyanosis is minimal.
4. Electrocardiogram: usually right axis deviation.

Incidence in this Series—Three patients; the oldest was 8 months of age.

Fig. 58—Specimen from which models shown in figures 56 and 57 were prepared. Interior of right ventricle and persistent truncus arteriosus.

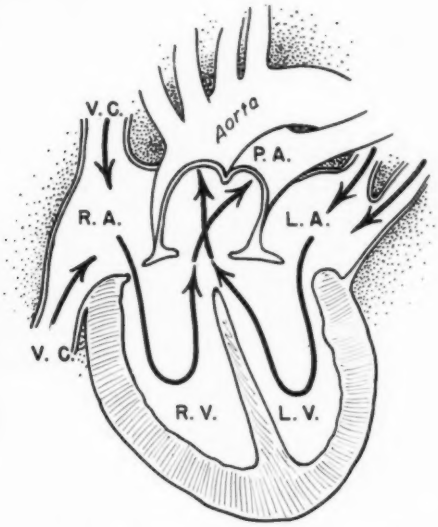


Fig. 59—Diagram of intracardiac circulation in persistent truncus arteriosus.

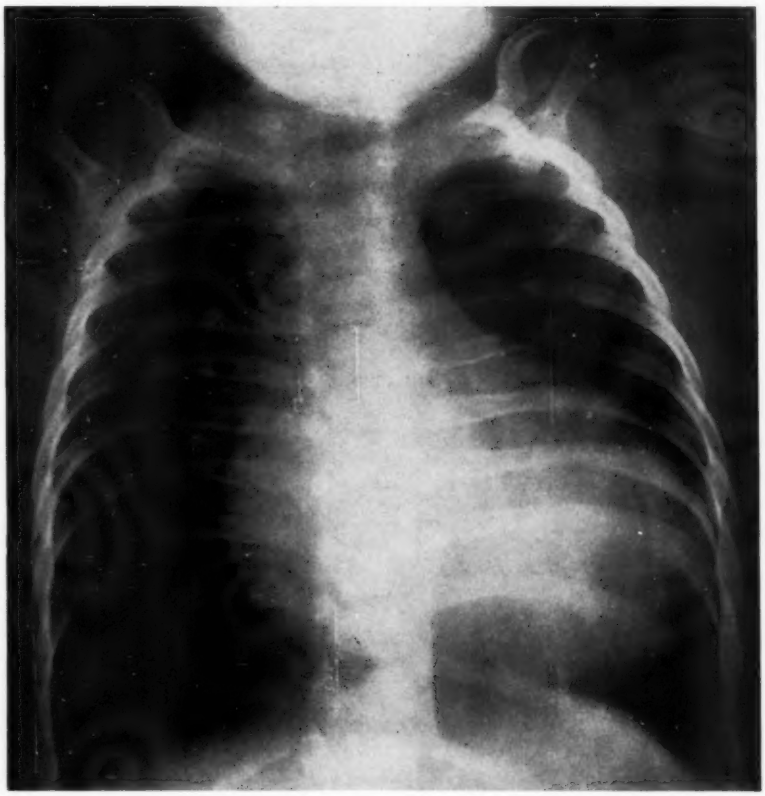


Fig. 60—Electrocardiogram and thoracic roentgenogram of the patient whose heart is illustrated in figures 56, 57, 58 and 59.

Patent Ductus Arteriosus

(Cylindric and Window Types)

G. A. GIBSON

1854-1913

In Britain the characteristic murmur of a patent ductus arteriosus is still known as "Gibson's murmer." His repeated emphasis upon the clinical diagnosis through recognition of the characteristic murmur, as well as the physiologic disturbance created by it, were major contributions. His article entitled "Persistence of the arterial duct and its diagnosis," published in 1900, is a classic. Shortly thereafter (1907), an American surgeon, John C. Munro (1858-1910), prophetically referred to the possibility of ligation of a patent ductus arteriosus provided a diagnosis could be made beforehand.

Patent Ductus Arteriosus

(Cylindric and Window Types)

THESE two hearts illustrate two anatomic types of patent ductus arteriosus, the cylindric type and the window type. As a consequence of the shunt from aorta to the pulmonary arterial system, there is dilatation of the pulmonary arteries and the left side of the heart.

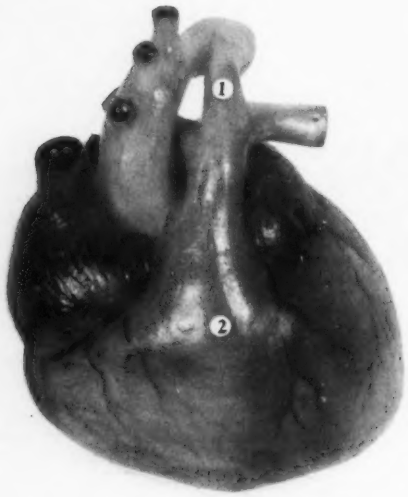


Fig. 61—Cylindric type (model x1).
(1) Patent ductus arteriosus. (2) Dilated right ventricular outlet.

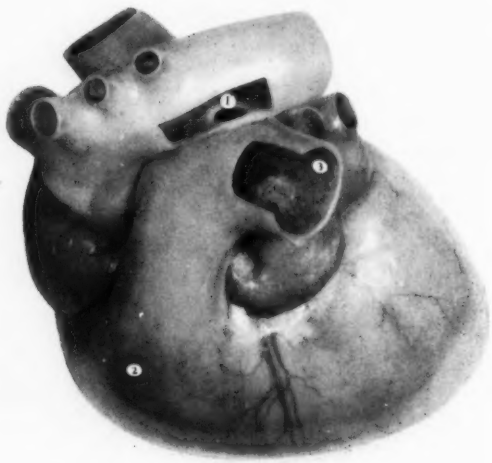


Fig. 62—Window type (half-size model).
(1) Window type patent ductus arteriosus. (2) Dilated right ventricular outlet. (3) Dilated left pulmonary artery.

History of these Patients

A MALE, 6 weeks old (fig. 61), had had a basal systolic murmur and cardiac enlargement since birth (premature), with feeding difficulty and poor development. Sudden respiratory embarrassment with terminal cyanosis occurred. In a man, 45 years old (fig. 62), a continuous murmur had been heard when he was 30 years old. Cardiac failure recurred intermittently for three years; he died suddenly of pulmonary embolism. On his last admission a loud systolic apical murmur (typical ductus murmur absent) and auricular fibrillation were noted. Systolic blood pressure was 110; diastolic, 70. A thoracic roentgenogram showed cardiac enlargement with a prominent pulmonary artery. Electrocardiograms showed a change to right axis deviation.

Principal Clinical Features of this Anomaly

1. Continuous arteriovenous fistula type of murmur, usually associated with thrill.
2. No cyanosis; normal arterial oxygen saturation.
3. Increased pulse pressure (collapsing pulse).
4. Increased oxygen content of pulmonary arterial blood relative to right ventricular blood (catheter technic).
5. Roentgenologic aspects: prominent left ventricle and pulmonary artery; increased hilar pulsations.
6. Electrocardiogram: normal or left axis deviation.

Incidence in this Series—Twenty patients; 6 weeks to 59 years old. Eight were 35 years of age or older.

Fig. 63—Specimen from which the model shown in figure 61 was prepared.

Fig. 64—Specimen from which model shown in figure 62 was prepared. Interior of the left pulmonary artery. Mouth of ductus in circle.

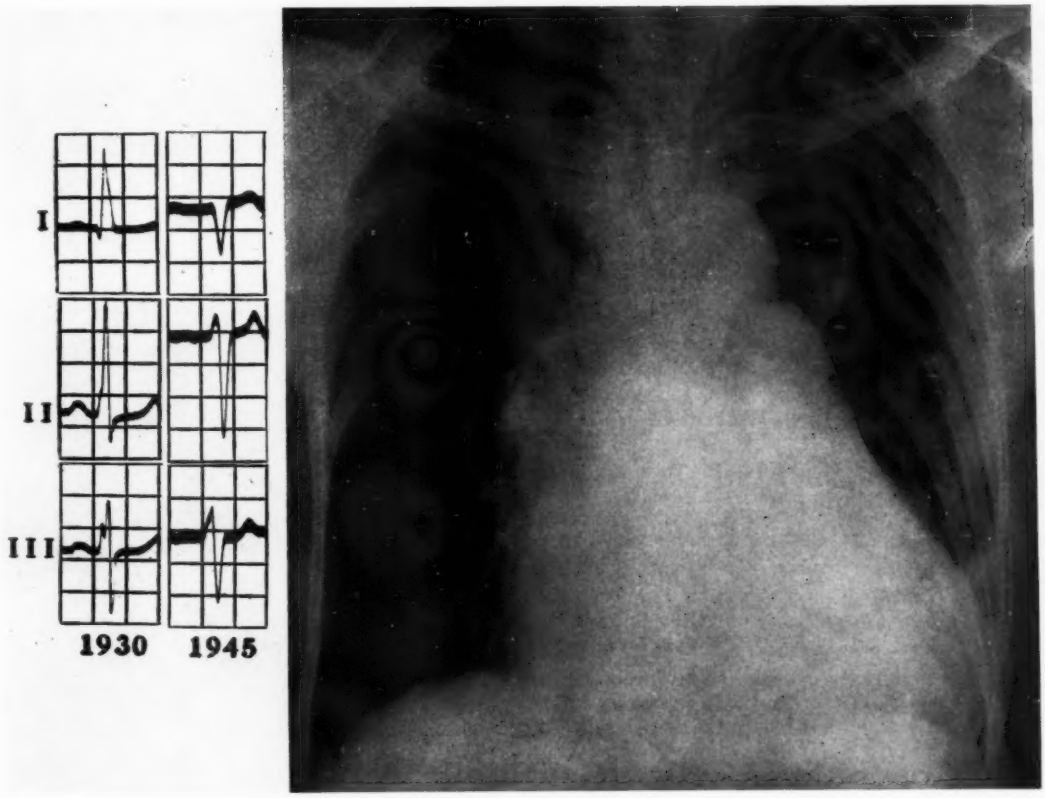
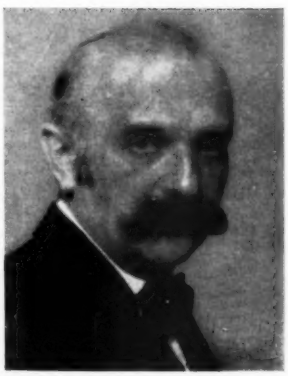


Fig. 65—Electrocardiogram and thoracic roentgenogram of the patient whose heart and great vessels are shown in figures 62 and 64.

Atresia of Aortic Orifice

(*Functional Two-chambered Heart*)



JULIUS TANDLER

1869-1936

Julius Tandler was the author of many works on gross anatomy as a pure science and on anatomy as applicable to the surgeon. By close association with clinicians, anatomy was for him a science of functioning organs. To the field of congenital cardiac disease, his greatest contributions were the results of his investigations on cardiac embryology. His chapter on the development of the heart in Keibel and Mall's text on human embryology, published in the early part of this century, is still a valuable and authoritative reference.

Atresia of Aortic Orifice

(*Functional Two-chambered Heart*)

IN THIS heart the primary malformation is atresia of the aortic orifice.

As a consequence of the abnormal circulation, the ductus arteriosus and the foramen ovale are patent, and the right atrium, right ventricle and pulmonary artery are enlarged. The left ventricular wall is thick, but its chamber is diminutive.

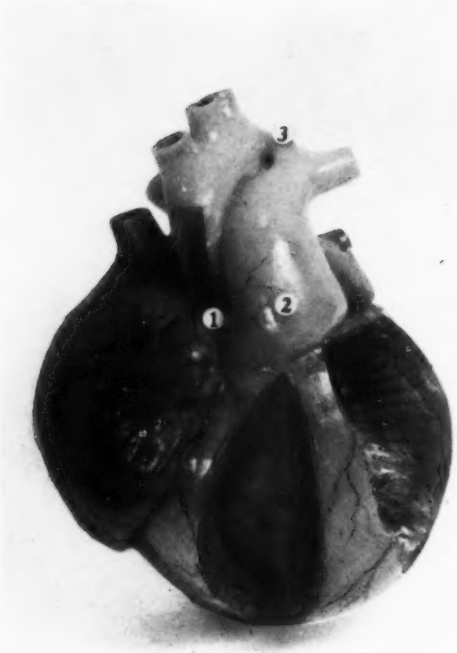


Fig. 66—Anterior view (model x1).
(1) Site of atretic aortic orifice. (2) Dilated pulmonary artery. (3) Patent ductus arteriosus.

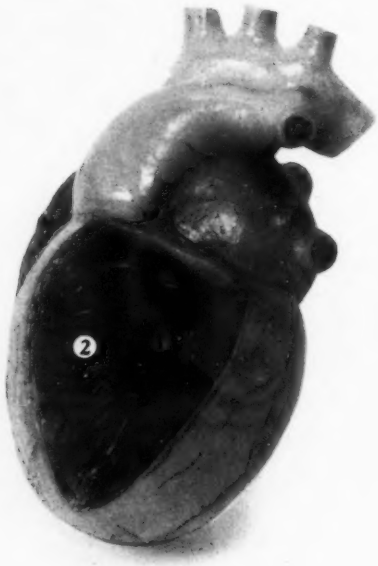


Fig. 67—Left anterior view (model x1).
(1) Diminutive left ventricular chamber. (2) Thick left ventricular wall.

History of the Patient

IN A FEMALE, 3½ months old, intermittent cyanosis, occurring with crying and exertion, began at the age of 2 weeks. The infant did not gain weight. Dyspnea and cyanosis became more intense. A short basal systolic murmur was present. Hemoglobin amounted to 19 gm. per 100 cc. of blood; erythrocytes numbered 5,670,000 per cubic millimeter of blood. Thoracic roentgenogram showed right ventricular enlargement, with prominent pulmonary conus shadow. Electrocardiogram showed right axis deviation. The infant died suddenly.

Principal Clinical Features of this Anomaly

1. Progressively severe cyanosis.
2. Death in early infancy.
3. Roentgenologic aspects: prominent right ventricle and pulmonary artery.

Incidence in this Series

Seven patients, of whom 5 succumbed by the eighth day. The oldest patient was 3½ months of age.

Fig. 68—Specimen from which models shown in figures 66 and 67 were prepared. Interior of pulmonary artery, ductus arteriosus and aorta.

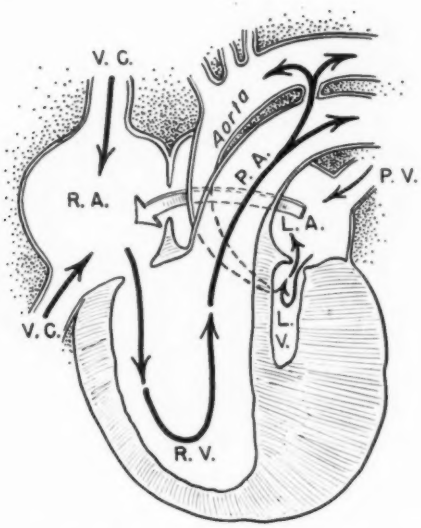


Fig. 69—Diagram of intracardiac circulation in atresia of aortic orifice.

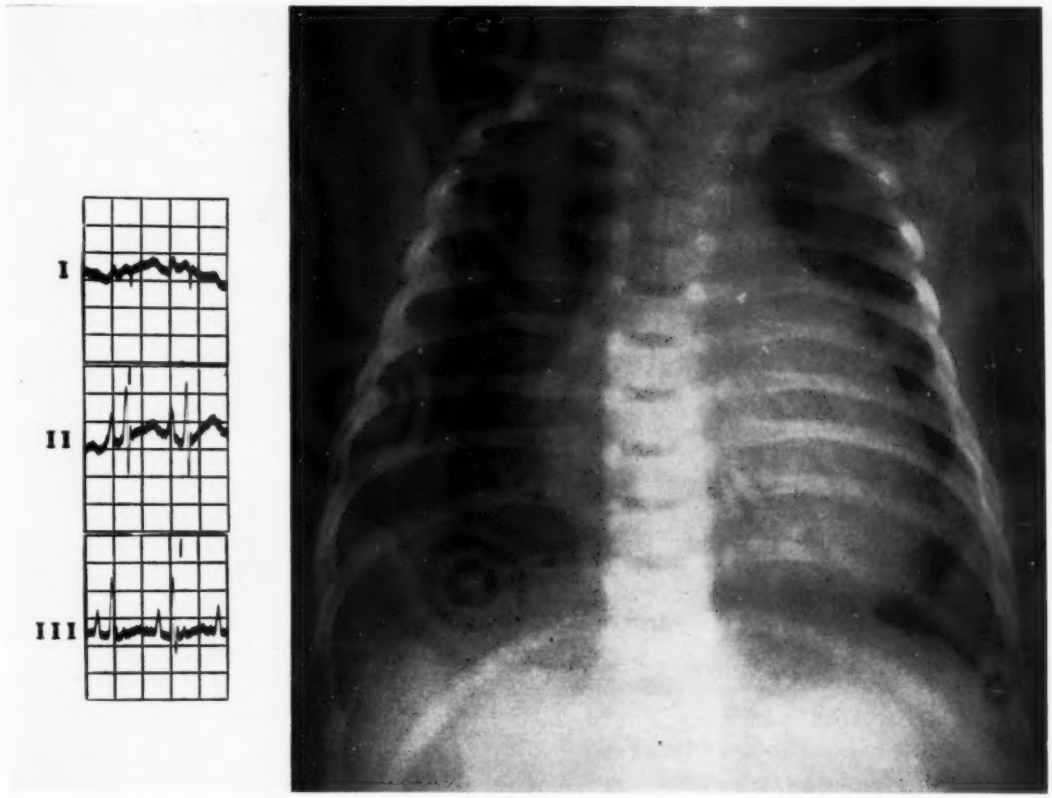


Fig. 70—Electrocardiogram and thoracic roentgenogram of the patient whose heart is shown in figures 66, 67, 68 and 69.

Anomalous Aorta

(With Right Descending Aorta and Right Ligamentum Arteriosum)

JOHN BAPTIST MORGAGNI

1682-1771

In both old and recent reviews, the description of the cyanotic girl of 16 years, in whom Morgagni found a pulmonary stenosis, is considered to be the first good clinicopathologic study of cyanotic congenital cardiac disease. It is of unusual interest because the patient had a relatively rare lesion; namely, pulmonary stenosis without a ventricular septal defect. In spite of the rarity of the lesion, it was the first type of congenital cyanotic lesion correctly diagnosed clinically (James Hope, 1830), and is well illustrated by Peacock (1866).

Anomalous Aorta

(*With Right Descending Aorta and Right Ligamentum Arteriosum*)

THIS is a rare type of anomalous aorta. It is the mirror image of a more common type of anomaly in which the aortic arch passes over the right bronchus and then behind the esophagus to join the left-sided descending aorta. In this specimen the aorta passes over the left bronchus and then courses to the right, behind the esophagus, to join the descending aorta, which is on the right side. The ligamentum arteriosum is on the right, extending from the right pulmonary artery to the aorta. The right subclavian artery arises from the aorta at the junction of the aortic arch and descending aorta. There is no intracardiac anomaly.

Fig. 71—Anterior view (model x1).
(1) Aortic arch. (2) Trachea and esophagus. (3) Pulmonary artery.

Fig. 72—Viewed from above (model x1).
(1) Trachea and esophagus encircled and compressed by vascular ring. (2) Right-sided descending aorta. (3) Right-sided ligamentum arteriosum.

History of the Patient

A MALE, 17 months old, had had an imperforate anus at birth; colostomy performed, but development was poor. Dysphagia noted after first year. The infant died of intestinal obstruction.

Principal Clinical Features of these Anomalies

1. Dysphagia (dysphagia lusoria) may or may not be present.
2. In infants: may be marked respiratory distress, with stridor and inspiratory collapse of lower thorax.
3. In adults: extrinsic pulsating lesion has been seen posteriorly by the esophagoscope.
4. Roentgenoscopic examination reveals evidence of right aortic arch or anomalous subclavian artery or double aortic arch.
5. Usually, there is no evidence of intracardiac anomaly.

Incidence in this Series—Two patients: one 2 months old (double arch); one 17 months old.

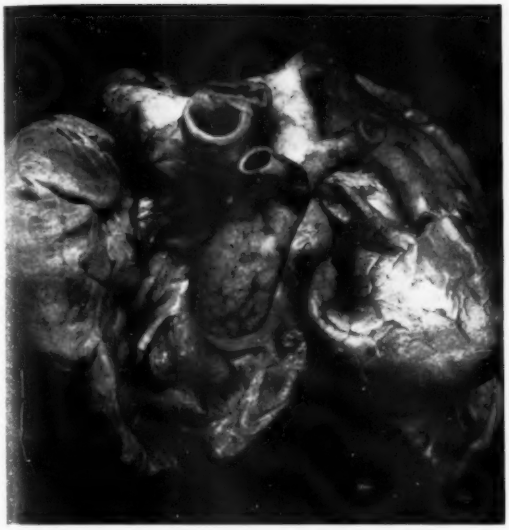


Fig. 73—Specimen from which models shown in figures 71 and 72 were prepared. Superior view of thoracic organs.

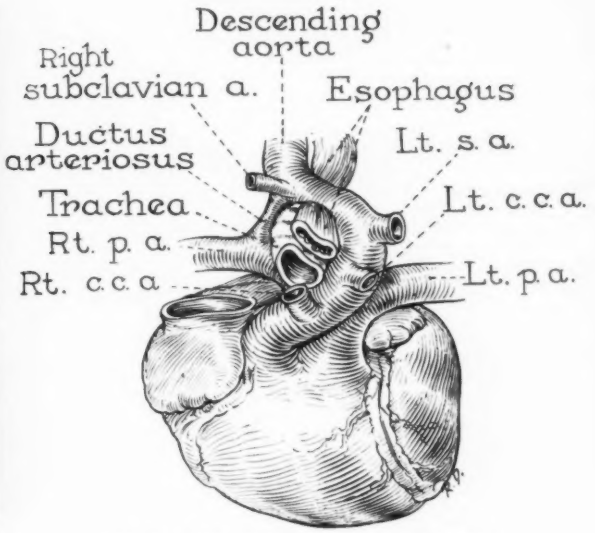


Fig. 74—Drawing of the heart and mediastinal structures in figures 71, 72 and 73.

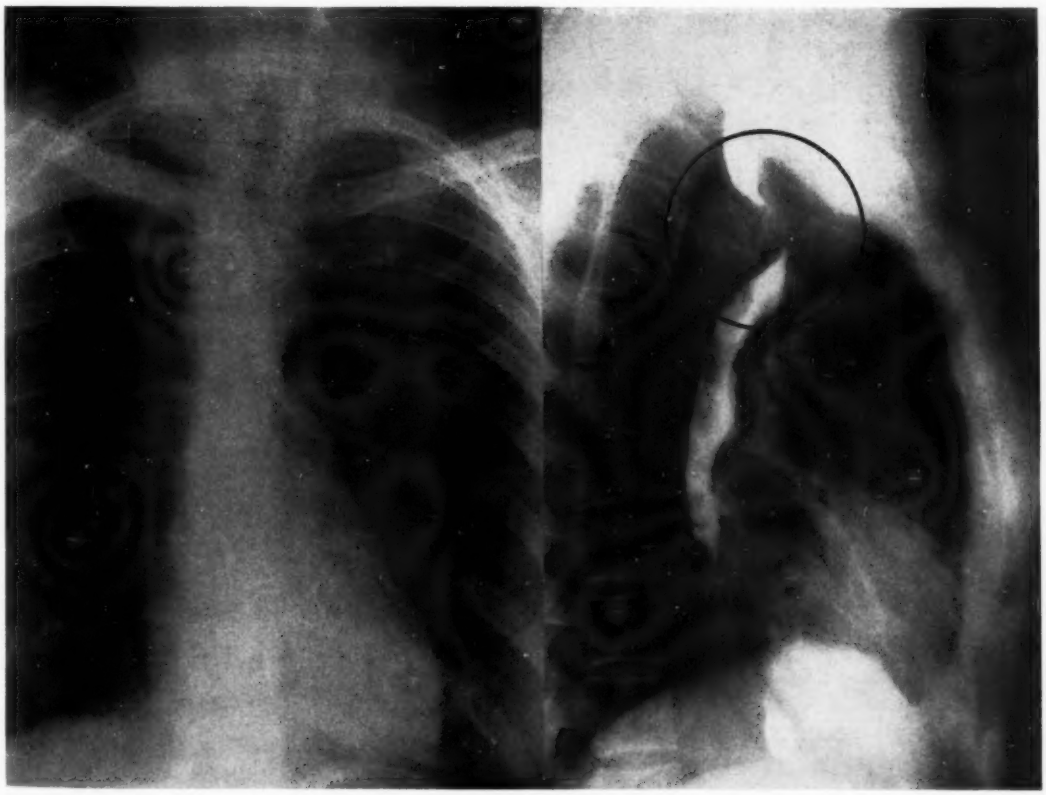


Fig. 75—Anteroposterior and lateral thoracic roentgenograms in a case of anomalous aorta (right aortic arch).

Coarctation of the Aorta

MAUDE E. ABBOTT

1869-1940

To this century's students of congenital cardiac disease, particularly on the North American continent, Maude Abbott's name justly comes first to mind. Stimulated through an early association with Sir William Osler, she in turn stimulated more extensive interest in congenital cardiac defects and their correlation with the clinical features. Her eminence as a pathologist was widely recognized and her Atlas will long remain an authoritative source of data for studies on congenital cardiac disease.

Coarctation of the Aorta

Two instances of coarctation of the aorta are shown here. One is an example of a typical "infantile" type of coarctation in which the region of constriction is proximal to a patent ductus arteriosus. In the other, the constriction is in an atypical position, between the origins of the left subclavian and the left common carotid arteries.

Fig. 76—Infantile type (model x1). (1) Site of aortic coarctation. (2) Patent ductus arteriosus.

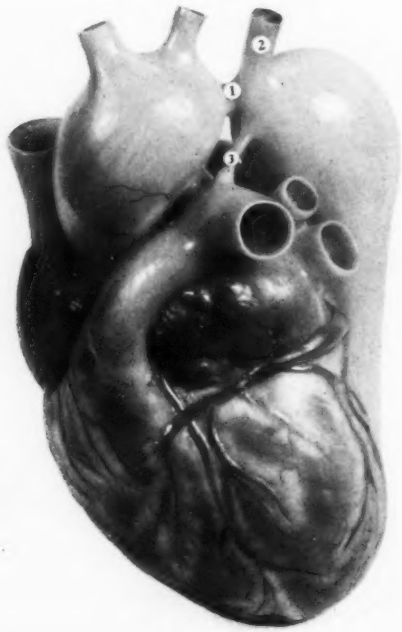


Fig. 77—Atypical type in adult (half-size model). (1) Site of aortic coarctation. (2) Left subclavian artery. (3) Ligamentum arteriosum.

History of these Patients

A MALE, 3 days old (fig. 76), apparently was normal at birth, but on the third postnatal day became cyanotic and died suddenly. A man 26 years old (fig. 77) was admitted with heart failure. Aortic systolic and diastolic murmurs and cardiac enlargement were found. Blood pressure in the right arm was 210 systolic and 40 diastolic; in the left arm it was 110 systolic and 78 diastolic. It was not obtainable in the legs. Pulse was absent in the abdominal aorta and femoral arteries. A thoracic roentgenogram showed cardiac enlargement and absence of the aortic knob, but no notching of ribs. Patient died of aortic valve bacterial endocarditis.

Principal Clinical Features of this Anomaly

1. Hypertension as measured in arms; hypotension or normotension in legs.
2. Decreased or absent pulsation of the abdominal aorta and of the arteries in legs.
3. Palpable pulsating collateral vessels.
4. Frequently, basal systolic murmur; rarely, an aortic diastolic murmur.
5. Roentgenologic aspects: notching of ribs, left ventricular hypertrophy, absence of aortic knob.
6. Electrocardiogram: left axis deviation or left ventricular strain pattern.

Incidence in this Series—Sixteen patients; 3 days to 51 years old (twelve 13 years old or more).

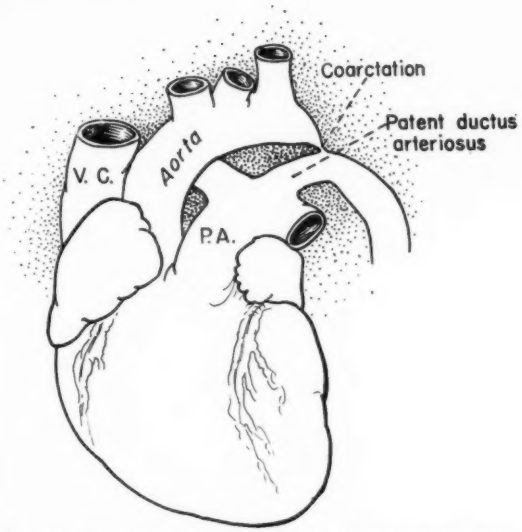


Fig. 73—Diagram of "infantile" type of aortic coarctation.

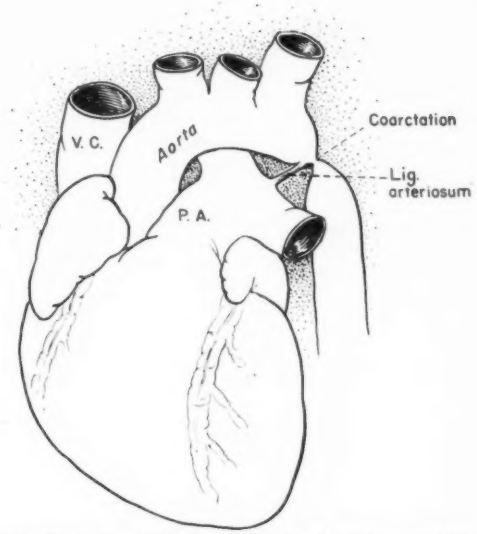


Fig. 79—Diagram of typical "adult" type of aortic coarctation.

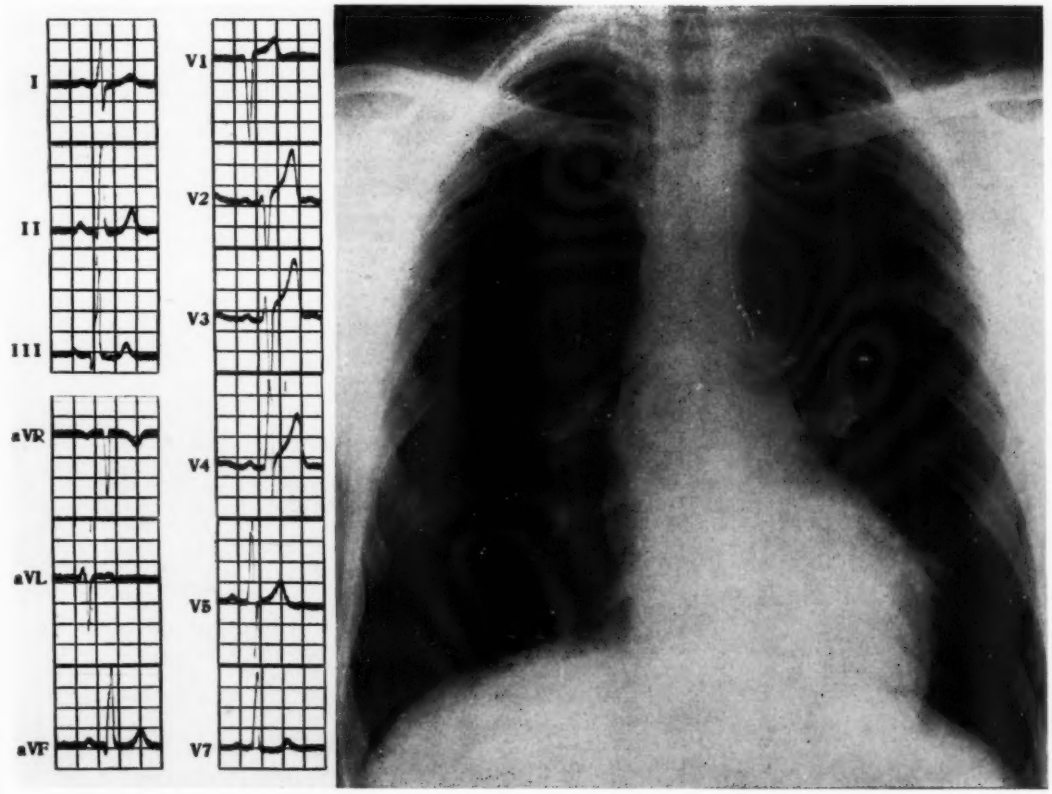


Fig. 80—Electrocardiogram and thoracic roentgenogram in a typical instance of aortic coarctation in an adult.

The Medical Bookman

DIAGNOSIS IN GYNAECOLOGY*

In this new textbook Dr. James V. Ricci has presented in a novel manner, the essential information necessary for correct diagnosis of gynecologic diseases. Instead of describing each disease as a separate entity, the etiology, symptoms, and means of diagnosis are discussed separately for each anatomic division of the female generative organs.

The aim of the text as stated in the preface is to teach the art of gynecologic history taking and the conducting of a careful gynecologic examination in order to arrive at a correct diagnosis. Much of the subject matter presented is based on clinical demonstrations given by the author to student sections of the New York Medical College. Dr. Ricci is clinical professor of gynecology and obstetrics and is also director of gynecology at the City Hospital, New York. In addition he is known for his contributions to literature, particularly his excellent monograph on extraperitoneal cesarean section, and his historical review entitled "Geneology of Gynecology."

The first part of the text appropriately deals with the basic knowledge necessary before approaching the gynecologic patient. The first two chapters include brief but lucid descriptions of the anatomy, histology, and embryology of the genital structures and their adjacent organs, and a discussion of the source, chemistry, and function of the female sex hormones, including the physiology of ovulation and menstruation. Following is a chapter dealing with general considerations in which the author describes diagnosis as a matter of analysis and synthesis of data obtained from history, examination, and laboratory data.

Frequently, in intrapelvic disease facts are not available and assumption must be woven into diagnostic thinking. However the author warns that too many assumptions and too few facts lead to a large number of diagnostic errors. The author mentions the large number of female patients who come to the gynecologist with nongynecologic maladies such as neuroses, psychic disturbances, postural and occupational pelvic strains and even nutritional disturbances. The failure of the text to expand to the discussion of psychosomatic symptoms may be explained by the author's assertion that the soundest diagnostician is one who resorts to the diagnosis of neurosis in the fewest cases.

The perfectly written history is stated to be a systematic chronologic record of all the pertinent facts, carefully considered and properly evaluated. It is necessary to gauge the temperament and mentality of a patient, allow her to tell her own story, and use tact and guidance to bring order to the recital. The marital history and menstrual history must be taken in detail with particular attention to the date of the patient's last normal menstrual period since this may be a clue to many gynecologic disorders.

The author stresses the importance of systemic examination including physical examination, blood studies, blood pressure, and urine analysis. Symptoms and lesions pointing to extragenital pathology call for investigation by competent clinicians. The gynecologist who concentrates on the pelvic and vulval areas to the exclusion of the rest of the body may expose himself to serious error and the patient

*Diagnosis in Gynaecology (A Classification of Gynaecological Diseases Based on Etiology and the Clinical Logic for Diagnosis). By James V. Ricci, A.B., M.D. Philadelphia: The Blakiston Company, 1948. Price $4.50.

to serious postoperative complications. The author decries the failure of the specialty of gynecology to retain the mammary glands in its own particular therapeutic sphere. A detailed discussion of abdominal examination from the point of view of the gynecologist is presented.

In the chapter on gynecologic examination the author describes in detail the technic of bimanual examination. The traditional use of the left hand is said to have originated in the preantiseptic age of meddlesome gynecologic therapy when the examiner needed his useful hand to handle the diverse instruments then used. The author recommends the use of the right hand and describes methods for overcoming the disadvantages of short fingers and for facilitating palpation of the uterus in obese patients. The speculum examination is placed following the bimanual examination contrary to the practice of many gynecologists who prefer to visualize the cervix and vagina before palpation. Special types of gynecologic examination are listed and discussed but cytologic study for the detection of carcinoma is omitted. A brief outline for examination of sterility patients concludes this chapter.

In the following chapter gynecologic symptoms are classified in the order of their frequency. Pelvic pain, vaginal bleeding, and leukorrhea are given as the most common symptoms. The nature of each symptom in relation to the responsible disease is described. Ten major groups of gynecologic diseases are listed and separately discussed in the next chapter which includes a comprehensive breakdown of each group into its component types of disease. For example, under inflammatory disease the pathologic entities produced by the gonococcus, the staphylococcus and streptococcus and the tubercle bacillus are listed, as are reactions of various parts of the genitals with characteristic tissue response produced by such invaders as the luetic spirochete, the Donovan body, bacillus Ducrey, the bacillus crassus, viruses, worms, protozoa, and fungi.

Psychosexual phenomena while listed as a major gynecologic disease are accorded only a very brief paragraph in which the author states that such entities must be considered borderline conditions which perhaps belong to the clinical realm of the psychiatrist rather than the gynecologist.

The remaining seven chapters of the text are devoted to the classification and discussion of diseases based on etiology according to the involved anatomic portions of the female genital tract. Dermatologic diseases of the vulvovaginal and perineal areas are first discussed followed by a classification and discussion of vulvoperineal diseases, diseases of the vagina, the cervix, uterus, tubes, ovaries, genital ligaments, and parovarium. The discussion of each disease entity includes a description of clinical manifestations, diagnosis, and differential diagnosis.

The method used by the author in organizing the text necessarily leads to a certain amount of repetition. Since, however, the text is intended primarily for instructors and postgraduate students this repetition is of advantage because of its impression value. The general practitioner should find the text valuable particularly as a desk reference for diagnostic problems in this field. The material is well indexed to facilitate such reference. By omitting illustrations and bibliography the author has been able to consolidate a large amount of information into a book of only 259 pages. The text should be considered a definite contribution to gynecologic teaching.

M. B. S.

MEN OF MEDICINE

Fifty Years for the General

SURGERY's spryest veteran, Dr. Willard Bartlett of St. Louis, marked this month (September) his fiftieth year in active practice. But the bald-headed, little abdominal operator with the card-index memory persists in recalling that he might have become a musician.

As a youth in his native Illinois, he was an avid piano student, sang in a regional glee club, played the cornet with a band. "My musical talent, if carried out," he often says wistfully, "might have given the waiting world one more long-haired artist instead of a bald-headed surgeon."

The fact is that Willard Bartlett the musician never had a chance. As the diminutive St. Louisan is fond of noting, there had been surgeons in the family since the Revolutionary War, when Josiah Bartlett maintained a topflight practice which he halted long enough to found the New Hampshire State Medical Society and become the second signer to the Declaration of Independence. Three of Josiah's sons, augmented by a couple of related Bartletts, gave the family six notches in its surgical belt during the revolution. Later, Dr. Willard Bartlett's father, A. T. Bartlett, served as a Union Army surgeon during the Civil War. He lived to be 88—in part, some members of the family suggest lightly, because he wished to see son Willard headed unswervingly on a lifetime given to the practice of surgery.

Subsequent developments suggest that if Willard Bartlett were given the proverbial opportunity to do it all over again, he would neatly impale his musical chances on the point of a scalpel and go back to the operating room. For one thing, two of his three sons have followed him in surgery, very obviously to his extreme pride. Moreover, there is scarcely anything which delights him more than the sight of one of his nine grandchildren, Willard III, playing doctor in juvenile fashion with his grandpa's old stethoscope and instrument bag. But the chief test is that although he has had the opportunity for at least fifteen years now, he persists in refusing to acknowledge the existence of the word "retire." Although he returned, in some degree, to active surgery during the war years, when his sons were in service, it isn't a matter of stubbornness with the elderly surgeon, but a labor of love.

Six days a week, like well-oiled clockwork, he shows up at his midtown St. Louis office. Much of the time he spends as a consultant. Most of the time he devotes to reflective correspondence with those of his old friends who are left, out of the days when individual brilliance, somewhat less than attention to refinements, marked the surgical operator.

In the case of Willard Bartlett, this is a subject of no small moment. Among his cherished comrades today are Dr. George Dock of Pasadena, now 88, Dr. Fred Lund of Boston, and Dr. Rudolph Matas of New Orleans, whom Dr. Bartlett, himself one of the founders of the College of Surgery, firmly regards as the father of vascular surgery. A partial roster of his other comrades in arms, many of them gone, reads like a medical Who's Who. An inveterate traveler, he made many trips to Europe with Harvey Cushing, John Finney, George Crile and Elliott Cutler, when all of these were active members of the Society of Clinical Surgery.

Most warmly of all, he remembers Charlie and Will Mayo. Dr. Bartlett first met the latter when he came to St. Louis to demonstrate an operation on the common bile duct. The St. Louisan, freshly returned from postgraduate studies in Germany, was then only an assistant to the brilliant Dr. A. C. Bernays.

WILLARD BARTLETT

From that encounter over somebody's bile duct came a kinship that was to last a lifetime. Beginning in 1902, Dr. Bartlett made almost annual visits to Rochester. When he developed his original method for drying, sterilizing, and storing catgut in pliable form, it was the Mayos, he recalls, who introduced it into their operating rooms and gave it impetus throughout the profession. The method, which cut drastically into the incidence of postoperative stitch abscesses, resulted from Dr. Bartlett's recognition that previous sterilization methods did not remove from surgical catgut the anthrax which came with it out of sheep's intestines. He literally boiled the gut in oil and stored it effectively in methyl alcohol. The Mayos quickly perceived its value.

When he was past 70, Dr. Bartlett picked up the knack of touch-typewriting, to help him set down in written form his enthusiasm for the life he has lived. In the 200-page memoirs, which he completed just last month, he wrote of "the indefinable human something Dr. Will and dear old Charlie possessed—that truly gracious quality which turned visiting doctors into consultants and every patient into a devoted friend. Many of us sit idly by to see a dream come true. These men of destiny were eager to give all of themselves to *make* one come true."

The quotation serves as a key to Dr. Bartlett himself. It evidences the flare for phrase-making that was exhibited years ago when he was wont to say, in summing up his unyielding disinclination to operate on moribund patients, "Let them do their own dying." It displays, too, a mellowness and a sentimentality that his own sons sometimes failed to perceive in the days when he was setting the pace in the field of toxic goiter surgery. To his boys, he was always "The General." Dr. Willard Bartlett, Jr. confesses ruefully, "We kids were scared to death of him."

His perfectionism, stiffened by his student days among the Germans, made him a tiny terror whose demands upon others for operating room efficiency were exceeded only by the demands he placed upon himself.

During two periods in his career when he was laid low by pleurisy attacks brought on by overwork, Dr. Bartlett formed the practice of coming home in the afternoon and going immediately to bed, where he had supper and then made notes on the day's work. "Dear me, I did do that, didn't I?" he now says disarmingly, when reminded of it.

Like all his memories, Dr. Bartlett's recollections of his childhood in Virden, Illinois, a hamlet near Springfield, are clear and vivid. He recalls watching his father perform operations on kitchen tables. The greatest lesson he believes he took from those days was in being reminded that there is a time when not to operate.

An outstanding boy debater, he took his bachelorate degree from Illinois College in Jacksonville, then wrote a thesis on kidney stones to win a master's sheepskin. When he went to St. Louis in 1892 to enroll in the first three-year course offered at what was then Marion Sims, the city had twelve medical colleges. "With but few exceptions," he remembers, "they were either eclectic, homeopathic, or diploma mills."

Still, the young Bartlett felt fortunate. Attending Rush Medical College, his father had been forced to squirm through three years of the same set of lectures repeated three times. The son listened to the same lectures only twice.

It was at his father's suggestion that he went to Germany for further study at Berlin, Strasbourg and Rostock. It was not, he says, until be began to dream in German, that he knew he truly was ready to soak up the technic and atmosphere of German science. Before he completed his German phase, he was to study with some of the great men of the age, teach a course himself in morbid anatomy—in German—and absorb an utter admiration for the best of the German spirit.

In Berlin, one of his first teachers was the pathologist, Rudolph Virchow. On their first meeting, the short-statured American took him for a janitor. "I wish to find Dr. Virchow," he said. The pathologist motioned for him to follow, led the way to the laboratory, took off his coat and said, "Little one, you have found him."

His stay in Germany enabled him to be on hand when Roentgen made his first announcement and gave his first public demonstration of his x-ray discovery from the Crookes vacuum tube. It is to

his Teuton training in chemistry and applied science that Dr. Bartlett attributes the discoveries in which he takes greatest pride.

Until recently, he never had thought to speculate on what achievement in fifty years of practice gave him maximum satisfaction. When asked, he took only a moment to skip coldly by his recognized feats of surgical dexterity, in favor of a piece of research carried on in 1910 with Dr. Joseph Erlanger. In it, the pair demonstrated that shock went with dilation of the blood vessels.

The Bartlett method for sterilizing catgut without losing its pliability came along in 1898. In 1913, tired of operating by light filtering through soot-covered or snow-packed skylights, he developed an operating room lighting system which for the first time employed electric light focused on the field from eight different sources. Reported on in 1913 as the "No-Shade" light, it drew praise from governmental sources, who said Dr. Bartlett had developed "a new principle in optics." The veteran surgeon likes to think that the operating room lighting systems of today are simply refinements of his basic principle. He declined a government basic-patent offer.

In 1910 came the first of his many trips to Europe with Charles Mayo, George Crile, J. B. Murphy of Chicago, and other leaders in the Society of Clinical Surgery. Already, the ambidextrous, deceptively slow-moving Bartlett had won respect for the way in which he achieved speed without haste at the operating table. He was in the vanguard of those who learned to fit operative technic to patient resistance by stages, appeared again in the front ranks when surgery began to shift its emphasis in the direction of preparing a patient before surgery rather than nursing along his strength in the midst of it. "Today," he now observes stiffly, "no operation on toxic goiter will be performed until the patient first is perfectly restored to general health."

Like so many of the surgeons who operated in the period preceding the growth of the residency system, Dr. Bartlett had his own team of operating room assistants and nurses. His favorite assistant, a woman, is with him still, as much in the role of family friend as of nurse.

In 1922, the year he was named vice president of the American Medical Association, Dr. Bartlett published the first of two eminently successful books. This initial effort was "The After Cure of Surgical Patients," in which he startled many a professional colleague with talk of early postoperative ambulation, a policy he had begun to follow in his own practice twenty years before. In typically brisk and modest fashion, he attributes to his research for the book his special interest in thyroid diseases.

"I wrote the book to learn," he says reflectively.

His other top volume, "Surgical Treatment of Goiter," was issued in 1926. By that time he had struck up a friendship and was maintaining a reciprocally enthusiastic correspondence with Dr. Arthur E. Hertzler of subsequent "Horse and Buggy Doctor" fame. When Hertzler heard quite by accident, in 1926, that Dr. Bartlett was having his goiter volume published, the late great Kansan withheld for a year a pending book of his own on the same subject. Dr. Bartlett treasures a copy of the "Horse and Buggy Doctor," autographed for him in 1946 by Dr. Hertzler. In it, the author wrote on the flyleaf, "'To a big little guy who now becomes bigger with the pressure of the years'—by one privileged to see and understand the growth."

From several standpoints, Willard Bartlett undoubtedly is one of the most expert husbands in the medical profession. Not that he has kept better than average hours, but it is a rare man indeed who can face a typewriter at the age of 80 and confidently and tenderly peck out a description of the dress his wife wore on their honeymoon decades before. Dr. Bartlett turns this neat and disturbing trick in his memoirs, coupling it with a flowing tribute to the vivacious Genevieve Wilson, markedly his junior, whom he married in St. Louis in 1899.

Falling prey to his direct, engineering mind, he now recalls, he left his bride in a New Orleans courtyard during their honeymoon while he dropped in for a brief visit with his friend, Dr. Matas. He became so absorbed in a Matas operation that he stayed away for several hours, precipitating an early crisis that almost upset the connubial boat.

Mrs. Bartlett soon became accustomed to this, however, friends note, since the couple has enjoyed a close and fruitful kinship. It was not until later, presumably, that the surgeon's wife, herself a woman of diverse interests, heard of the comment her father-in-law made upon meeting her for the first time as a Bartlett-intended.

"Aren't you afraid," the old Civil War physician demanded, assaying the brief frame of his son's fiancée, "Aren't you a little afraid that you'll turn the Bartlett rats into mice?"

His father's fears, Dr. Bartlett hastens to note, proved entirely groundless. One of the couple's sons is a spanking six feet tall, and a second son is very nearly that.

Spurred by his two serious bouts with pleurisy, Dr. Bartlett early developed a studied conservation of his energies and augmented this with a planned program of good, rugged exercise. He never smoked, rarely took a drink, at this late stage of the game sometimes permits himself one old-fashioned to dilate his coronaries.

South of St. Louis, on a 10-acre lot overlooking the Mississippi River, he acquired a log cabin in the twenties to which he promptly dedicated every family weekend. His sons remember their days at the place—which was named "Klein Aber Mein" (Little—But Mine)—with considerably more pungency than their father does.

"It was manual labor every weekend," one of the Bartlett boys has said. "We cleared the 10 acres ourselves with scythes and sickles, and did all our own cooking. The place was on top of a high bluff. We'd climb the bluff, work all weekend, then fall back down the bluff and crawl into the city Sunday night. Father doted on it, and kept going there until clear into his 50's."

The old surgeon remains unconvinced. He believes, now that the river retreat has been sold, that his sons constantly are making up to its present owners in an attempt to angle invitations and relive some of their childhood times.

Perhaps he would not have retained his zest for surgery, nor his present hearty state of health, had he not followed the open road with such insistent regularity. Sometimes as a visiting surgeon for the United Fruit Company, more often on his own, he has made fully 18 trips to Central and South America, especially Honduras, giving medical lectures at various South American medical schools but keeping his sharp, observant eyes open for local color and custom.

Early in his travels southward, he acquired an interest in reptiles, which he considers much maligned. In 1930, he went so far as to undertake a Central American snake hunt for the St. Louis zoo, in the company of several zoo men, one of them—Marlin Perkins—since become head of the Brookfield Zoo in Chicago. With effervescent delight, he recalls an occasion when a native hooked his only pair of trousers through a porthole on the waterfront of San Salvador. He spins knowing yarns not only of snakes and snarers, but of architecture and music in foreign lands.

If he was a stern character in the operating room, an efficient machine who often singled out difficult cases as a challenge and drove himself unmercifully, he seems to have made up for it with a precocious sense of humor in the conduct of his social relationships.

Bald at an early age, Dr. Bartlett for many years owned a toupee, but intimates insist he wore it only on chilly days, to keep warm, and never for vanity. Dr. Bartlett's days as a wig wag ended when the family dog seized the hairdo one day and chewed it beyond recognition.

Dr. Bartlett took up golf after he was 60. Although his friends observe that he can't play worth a lick, and he admits in candid moments that their appraisal is valid, he went at it with the same overpowering enthusiasm which seems to have marked everything he has tackled. He has continued to be a spectator at many top golf tournaments, always finding a speech to deliver or a meeting to attend in the general vicinity.

When the Professional Golf Association championships were played off in St. Louis last year, Dr. Bartlett was right on hand, wearing an old sun helmet he picked up some years ago in South America and padded faithfully after the golfing greats. He likes to think that Sammy Snead, a family friend, owes his successes since 1940 to a Bartlett pickup. The surgeon ran into Snead in that year and found him in a despondent mood.

Snead said he had been practicing all day before a major tournament, yet his playing was growing worse instead of better.

Dr. Bartlett, quickly assuming a medical stance, prescribed a day on the veranda before a tournament, instead of a day of practice. "Sammy's play improved right off the bat," Dr. Bartlett says primly. "Simple, wasn't it?"

Always a prolific writer—a listing of his medical papers fills several long typewritten pages—the surgeon's output by no means has become completely stalled. Some time ago, a visit to Washington and Lee University in Virginia tickled his interest in the career of Stonewall Jackson. (As a youth, he had bicycled through the Shenandoah Valley.) It was no surprise to friends of the Bartletts when, in one of this year's issues of the Journal of *Surgery, Gynecology and Obstetrics,* there appeared under the Bartlett name a lucid dissertation on the medical care of the wounds that resulted in Jackson's death.

Dr. Bartlett continues these days to engage in a daily hour of calisthenics, a policy he inaugurated about five years ago. Still an avid student of snakes and animals, he rarely misses his daily stroll through the St. Louis zoo. He is scrupulous about maintaining his six-day a week office schedule.

He served during the recent war as a consultant to the Marine Hospital in St. Louis and carried on his sons' practice. That three-way partnership between father and sons, incidentally, ended last year when 47-year-old Willard, Jr., who came out of the Navy a captain, established his own office. Dr. Bartlett and his second son, Robert, who is 44, continue to share offices. The youngest Bartlett son, A. T. Bartlett, is an executive of the Shell Oil Co. in New York.

A thoroughgoing mystic, Dr. Bartlett recalls that in 1939, after Mrs. Bartlett had left for England to be on hand for the birth of A. T.'s first child, he got the vague feeling that he might not see his wife again. He took a fast boat to England, convinced Mrs. Bartlett after the birth of their grandchild that she should cancel her reservation on a later boat and return instead with him, so he wouldn't be lonely. The ship on which she was to have sailed was the S. S. Athenia, sunk halfway through its voyage by a German torpedo.

Dr. Bartlett sits in an office the walls of which are spotted with autographed photos of his great friends, so many of them now dead—Lord Moynihan, Haggard, Mumford, Cushing, the Mayos, Dock, Matas. But he is eminently ready to discuss present-day professional developments, warms to the boon of the antibiotics and the sulfa drugs. Only the advent of operating room air conditioning leaves him, so to speak, cool. This is because, as he explains, "I never was a sweater."

Younger surgeons find him a graphic demonstration of the values of a well-lived life. "The days never seemed dull nor the distances long," he muses. "The recollections of long ago seem as fresh as those of yesterday."

He is titling his memoirs, "One Surgeon Finds The Broad Highway Enchanting." All too few can make that statement.

ROBERT SCHULMAN

EDITORIALS

ETIOLOGY OF RHEUMATISM

THE CAUSE of rheumatic fever like that of rheumatoid arthritis has so far eluded positive identification. A possible bacterial causation, which was the subject of many investigations during the early part of this century, has not been established; it now seems evident that the primary cause must be sought elsewhere.

An editorial in the *British Medical Journal*[1] raises the question as to whether rheumatoid arthritis might be a neurologic disease, and summarizes some of the evidence supporting this hypothesis. The fact remains, however, that the symptomatology and pathology of most cases of both rheumatoid arthritis and of rheumatic fever are more characteristic of an inflammatory disease due to some kind of infection than to a degenerative type of neurologic disorder.

Recently Gordon,[2] writing on "rheumatism" but discussing principally rheumatic fever rather than rheumatoid arthritis, presents the evidence pointing to a virus causation. One virus, he points out, namely the M4 virus of Tulloch isolated from pooled smallpox crusts, possesses the power to produce fibrositis in rabbits causing a lesion histologically similar to the predominating lesion in "rheumatism." Another virus, namely that of psittacosis, after passage through mice, exhibits a special capacity to injure the myocardium of the rabbit.

Citing the work which has been done on the agglutination of elementary bodies, Gordon suggests that the evidence obtained from this source consistently points to an interrelationship between rheumatic fever, rheumatoid arthritis, and chorea—a situation which may justify return to the use of the more general term "rheumatism" to include those conditions even when characterized by variety of clinical manifestations. In rheumatic fever, he points out, a suggestively higher proportion of agglutination reactions occurs during the first attack as compared with recurrences. Agglutination also occurred in a striking manner in acute rheumatic fever and acute rheumatoid arthritis, although negative results were obtained in many cases.

The complement fixation test is more delicate than agglutination in detecting specific antibodies to a virus. Such work as has been done with this test is somewhat equivocal. From the evidence available, however, Gordon concludes that the chief infecting agent in rheumatic fever (which is the rheumatic granuloma of Aschoff) is almost certainly a virus.

In the face of failure to identify the causative factors of rheumatic fever and rheumatoid arthritis new possibilities must be investigated and certainly a virus or viruses must be carefully considered. A rickettsial agent is likewise a possibility, particularly since the microscopic pathology of some of the known rickettsial diseases is similar to that of rheumatoid arthritis and rheumatic fever. Similarity of the histologic picture, however, cannot be relied on to prove identity of causation and can be viewed only as a clue and not as evidence. Like-

1. SAVAGE, OSWALD: Speransky's method of spinal pumping in rheumatoid arthritis. Brit. M. J. 1:496-497 (March 13) 1948.

2. GORDON, MERVYN: Is rheumatism a virus disease? Lancet 254:740 (May 15) 1948.

wise the rabbit as an experimental animal for the investigation of the etiology of rheumatic diseases is of doubtful reliability since this animal[3] is particularly obliging in its ability to develop histologic lesions in the heart or joints similar to those found in human beings with rheumatic diseases.

E. P. J.

DOCTORS' DISEASES

According to Dublin, Spiegelman, and Leland,* recent death rates for physicians show a lower figure than the general population under age 45 but a slightly higher figure thereafter. Among the ten leading causes of death in physicians, diseases of the heart and blood vessels account for more than half, 54.0 per cent, as would be expected from a similar finding in the general population. But when comparative figures are drawn between specific circulatory disturbances, the mortality figures begin to appear much more significant. Thus the ratio of physicians to white males for "cerebral hemorrhage" is 1 to 20, for "diseases of the heart and coronary arteries" 1 to 18, and for "arteriosclerosis" 1 to 16, a substantial increase in physicians over others. And in the specific instance of coronary artery disease, not only is the physicians' death rate highest in the productive years of 45 to 65, but "compared with the general population, the death rate from these diseases among physicians is the higher by more than 80 per cent."

Granting that much of this excess mortality may be due to better diagnosis, by the same token physicians, who are at least in contact with diagnostic facilities and understand symptoms which might be warnings within their own selves, should have a lower mortality than the general population, if no other factors were in operation. That such other factors do operate to make this group of circulatory disturbances actually "Doctors' Diseases" seems practically certain.

The studies of Dunbar, Weiss and English, Alexander, Saul, and many others have shown one factor to be almost constantly present in those suffering from coronary heart disease and the essential type of hypertension, *conscious and unconscious emotional tension.* In fact, the characteristic personality type which Dunbar found in the coronary sufferer was: ". . . excessively strenuous work history; the patients worked long hours without vacations under considerable stress and strain. There was regularly a sudden reverse after achieving the goal for which they had been working." Elsewhere she describes the fundamental emotional drive in the coronary patient as an urge to be superior, to rise to the top, to become completely individualistic. This might easily be a description of the average successful physician, and in the light of these observations we can understand why doctors could claim coronary heart disease practically as an occupational hazard.

The point of conflict in the potential coronary victim, Dunbar found, lies in the relationship to authority as first developed with the parents, particularly the father, in the early years of life. A pattern of apparent adjustment to authority, coupled with a deep and lasting unconscious drive to compete with and exceed the father, is then carried over into all activities of life with resultant conflict with all forms of authority, school, business, government, etc., much of which is repressed, building up even more tension. Such a forceful drive to be superior must naturally result in a personality with a strong urge to succeed and considerable likelihood of realizing that ambition. Here again, we might be describing the average successful physician, particularly the type who suffers a coronary attack at a relatively early age.

The most interesting probability about this

3. Key, J. A.: J. Bone & Joint Surg. 15:67, 1933; Jordan, E. P.: Arch. Path. 26:274, 1936.

*Dublin, L. I., Spiegelman, Mortimer, and Leland, R. G.: Longevity and mortality of physicians. Postgrad. Med. 2:188-202 (September) 1947.

concept, however, is the likelihood that the inherent emotional drive probably stimulates the potential coronary victim to seek out a profession, such as medicine. A considerable proportion of doctors come from medical families, which is also in agreement with the well known factors of imitation and environment in psychosomatic disease. Coupled with this head start, it is not surprising that a person with an inherent desire to succeed and be superior, would choose the one profession which has perhaps a greater characteristic of individualism than any other.

The biblical injunction to "know thyself" deserves consideration by physicians. Psychosomatic studies show unquestionably that recognition of the role of emotional tension in any disease tends to lessen its effect upon the body. We shouldn't wait until 45 to stop and examine ourselves for evidence of tendencies toward the "Doctors' Diseases." By then the damage may already be done.

F. G. S.

INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

OFFICERS OF THE ASSOCIATION

PRESIDENT

Dr. Herman L. Kretschmer, Chicago, Ill.

PRESIDENT-ELECT

Dr. Evarts A. Graham, St. Louis, Mo.

PRESIDENTS OF CLINICS

Dr. John F. Erdmann, New York, N.Y.
Dr. Frank H. Lahey, Boston, Mass.

MANAGING DIRECTOR

Dr. Arthur G. Sullivan, Madison, Wis.

SECRETARY

Dr. Tom B. Throckmorton, Des Moines, Ia.

TREASURER AND DIRECTOR OF FOUNDATION FUND

Dr. Henry G. Langworthy, Dubuque, Ia.

SPEAKER OF THE ASSEMBLY

Dr. Mather Pfeiffenberger, Alton, Ill.

BOARD OF TRUSTEES

Dr. Edwin S. Hamilton, Kankakee, Ill.
Dr. Mather Pfeiffenberger, Alton, Ill.
Dr. Maurice R. Williamson, Alton, Ill.
Dr. Henry G. Langworthy, Dubuque, Ia.
Dr. John E. O'Keefe, Waterloo, Ia.
Dr. Tom B. Throckmorton, Des Moines, Ia.
Dr. John M. Dodd, Ashland, Wis.
Dr. Eugene S. Sullivan, Madison, Wis.

COMMITTEE ON MEDICAL RESEARCH AND ADVANCEMENT

Dr. Elliott P. Joslin, Boston, Mass.
Dr. W. Wayne Babcock, Philadelphia, Pa.
Dr. Charles H. Best, Toronto, Ont.
Dr. George Crile, Jr., Cleveland, Ohio
Dr. Evarts A. Graham, St. Louis, Mo.
Dr. Roy D. McClure, Detroit, Mich.
Dr. Jonathan C. Meakins, Montreal, Quebec
Dr. Eric Oldberg, Chicago, Ill.
Dr. James E. Paullin, Atlanta, Ga.
Dr. Erwin Schmidt, Madison, Wis.
Dr. Waltman Walters, Rochester, Minn.

PROGRAM COMMITTEE

Dr. Russell L. Cecil, New York, N.Y.
Dr. Henry A. Christian, Boston, Mass.
Dr. John R. Fraser, Montreal, Quebec
Dr. Duncan A. L. Graham, Toronto, Ont.
Dr. Herman L. Kretschmer, Chicago, Ill.
Dr. Frank H. Lahey, Boston, Mass.
Dr. Charles F. Martin, Montreal, Quebec
Dr. Charles W. Mayo, Rochester, Minn.
Dr. Howard C. Naffziger, San Francisco, Cal.
Dr. Charles H. Phifer, Chicago, Ill.
Dr. Leonard G. Rowntree, Miami, Fla.

Association Notes

DISTINGUISHED PHYSICIANS FROM OTHER COUNTRIES TO SPEAK AT CLEVELAND

In addition to the usual outstanding roster of American physicians, the program of the thirty-third Assembly of the Interstate Postgraduate Medical Association at Cleveland, November 9 to 12 inclusive, will also feature several distinguished lecturers from other countries. From Canada will come Dr. Robert M. Janes, Professor of Surgery, and Dr. Ray F. Farquharson, Professor of Medicine, both of the University of Toronto Faculty of Medicine, while London, England will be represented by Mr. Rodney Maingot, F.R.C.S., and Sir Archibald McIndoe, C.B.E., M.S., F.A.C.S., F.R.C.S. Still another leading foreign physician who will address the Assembly is Dr. Tage Kjaer of Copenhagen, Denmark.

Dr. Kjaer, who is affiliated with the Copenhagen Municipal Clinic for Thoracic Surgery, Oresundshospitalet, will speak on the subject, "*Bronchostenosis of Inflammatory, Probably Non-specific Origin.*"

MR. RODNEY MAINGOT

Dr. Kjaer was born April 13, 1901, in Copenhagen. He graduated from the Artium in 1926 and received his M.D. degree in 1936. From 1927 to 1932 he served as an assistant at different surgical and gynecological departments in Copenhagen; was assistant at the "Pathologisk Institut" of Copenhagen in 1933; assistant surgeon at the "Københavns Kommune-hospital" from 1934 to 1937; studied surgery in the United States in 1936 and became a specialist in general surgery in 1937. From January 1937 to April 1940, Dr. Kjaer took special training in chest surgery as assistant at the Brompton Hospital, London, England, the Hospital Laennec, Paris, and at the "Sabbatsberg Sjukhus" in Stockholm. From 1941 to 1943 he was chest surgeon at the "Oresundshospitalet" in Copenhagen and in 1944 became chief of chest surgery at that institution.

Dr. Janes graduated from the University of Toronto Medical School in 1916 and shortly thereafter went overseas with the Canadian Army. At the close of the first World War, he returned to Toronto and received the major portion of his surgical training at the Hospital for Sick Children and the Toronto General Hospital, the remainder being obtained at various hospitals in England, particularly St. Bartholomew's. He was appointed to the surgical staff of the Toronto General Hospital and University of Toronto in 1923 and now holds the chair of surgery at the University and is surgeon-in-chief of the hospital. Dr. Janes is a member of the American Association for Thoracic Surgery, fellow of the American Surgical Association, member of the Canadian Society of Clinical Surgeons, fellow of the Royal College of Surgeons of Canada of which he is a member of the Council, and a member of the Central Surgical Association.

Dr. Farquharson, who has been head of the Department of Therapeutics and Professor of Medi-

cine at the University of Toronto Faculty of Medicine since 1934, was born at Claude, Ontario, in 1897. He received the M.B. degree at the University of Toronto in 1922 and served as Junior and Senior Demonstrator in Medicine at that institution from 1928 to 1934. Dr. Farquharson is also assistant attending physician at the Toronto General Hospital, Trustee of the Banting Research Foundation, and a Consultant in Medicine to the Royal Canadian Air Force since 1943. He is a Fellow of the Royal College of Physicians of Canada.

Dr. Farquharson will speak on *"Extreme Insufficiency of the Anterior Lobe of the Pituitary Gland (Simmonds' Disease)."*

British surgeon Mr. Rodney Maingot was born in 1893 and educated in London. Before coming to his present post as Senior Surgeon of Royal Waterloo and South-end General Hospitals, he had been House Surgeon, Chief Assistant Surgical Unit of St. Bartholomew's Hospital, Registrar West London Hospital, Clinical Assistant St. Peter's Hospital for Stone, and Consulting Surgeon, Specialist South-end Victoria Hospital. Mr. Maingot is the author of "The Technique of Splenectomy," published in 1946, "Abdominal Operations," second edition published in 1948, and the recently published "Technique of Gastric Operations." Mr. Maingot's address at Cleveland will be on the *"Surgical Treatment of Cardiospasm."*

Sir Archibald McIndoe will discuss *"Total Reconstruction of the Face in Burns,"* when he appears before the Cleveland Assembly. Sir Archibald, who has the degrees of C.B.E., M.B., Ch.B., M.S., M.Sc., F.R.C.S., and F.A.C.S., is Consultant in Plastic Surgery to the Royal Air Force. He was born in Dunedin, New Zealand, in 1900 and received his education at the Otago Boys High School, the Otago Medical School, and the Mayo Clinic. In 1923 he was the St. Bartholomew's Hospital (London) Medallist in Clinical Medicine and Clinical Surgery; Mayo Foundation Fellow from 1924 to 1928; William White Traveling Scholar in 1929; Assistant Surgeon, Mayo Clinic, 1929-30; Chief Assistant to Plastic Department St. Bartholomew's Hospital; Hunterian Professor, 1939.

At present he is Surgeon-in-Charge Queen Victoria Plastic and Jaw Injury Centre, East Grinstead; Plastic Surgeon St. Bartholomew's Hospital; Honorary Plastic Surgeon Chelsea Hospital for Women and St. Andrew's Hospital, and Consulting Plastic Surgeon Royal North Staffs Infirmary, Hospital for Tropical Diseases.

Sir Archibald has been awarded the Commander Order of White Lion (Czechoslavakia); Officer Order Polonia Restituta (Poland), and Commander Order of Orange Nassau (Holland). He is the author of numerous publications on surgical and pathological subjects.

PRESIDENT AND PRESIDENT-ELECT TO SPEAK AT ASSEMBLY DINNER

A PRINCIPAL speaker at the annual dinner of the Interstate Postgraduate Medical Association Thursday evening, November 11, at the Hotel Carter in Cleveland, will be Dr. Herman L. Kretschmer, president of the Association. Dr. Kretschmer is professor of Urology (surgery), at the University of Illinois College of Medicine, Chicago.

Dr. Evarts A. Graham, president-elect of the Association, will also be presented at this function. Dr. Graham is Bixby professor of surgery and head of the department at Washington University School of Medicine in St. Louis.

Heading the Cleveland Committee in charge of meeting arrangements is Dr. David A. Chambers, president, Academy of Medicine of Cleveland and Cuyahoga County Medical Society, and Clinical Instructor in Urology, Western Reserve University School of Medicine. Dr. Chambers is being assisted by a Clinic Committee of which Dr. David Kirk Spitler is chairman and the following are members: Dr. Jac S. Geller, Dr. Carl Hamann, Dr. Robert E. Holmberg, Dr. James I. Kendrick, Dr. Gerald T. Kent, Dr. Fay LeFevre, Dr. W. H. Odell, and Dr. Walter J. Zeiter.

Program

CLEVELAND ASSEMBLY

INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION

Public Auditorium, Cleveland, Ohio, November 9 to 12, 1948

Tuesday, November 9

8:00 A.M.

8:00 Diagnostic Clinic: "Diet in The Treatment of Hypertensive Disease."

Dr. Irvine H. Page, Director of Research, Cleveland Clinic, Cleveland, Ohio.

Dr. A. C. Corcoran, Research Division, Cleveland Clinic, Cleveland, Ohio.

Dr. Robert D. Taylor, Research Division, Cleveland Clinic, Cleveland, Ohio.

8:30 Diagnostic Clinic: "Bronchiectasis."

Dr. Robert M. Janes, Professor of Surgery, University of Toronto Faculty of Medicine, Toronto, Ontario, Canada.

9:00 Diagnostic Clinic: "Present Day Rectal Diagnosis."

Dr. Douglass Palmer, Assistant Professor of Clinical Medicine, Cornell University Medical College, New York, New York.

9:30 Diagnostic Clinic: "Surgical Complications of Peptic Ulcer."

Dr. John D. Stewart, Professor of Surgery, University of Buffalo Medical School; Head of the Department of Surgery, E. J. Meyer Memorial Hospital, Buffalo, New York.

10:00-11:00 *Intermission for Review of Exhibits*

11:00 Diagnostic Clinic: "Lesions of The Colon and Rectum, Dealing Particularly with Malignancies, Polyposis, and Diverticulitis."

Dr. Richard B. Cattell, Lahey Clinic, Boston, Massachusetts.

11:30 Diagnostic Clinic: "The Surgical Treatment of Hypertension."

Dr. Winchell McK. Craig, Section on Neurological Surgery, Mayo Clinic; Professor of Neurosurgery, University of Minnesota Graduate School of Medicine, Rochester, Minnesota.

Noon Intermission

1:30 P.M.

1:30 Diagnostic Clinic: "Lesions of The Breast."

Dr. Arthur Purdy Stout, Professor of Surgery, Columbia University College of Physicians and Surgeons, New York, New York.

2:00 Diagnostic Clinic: "The Surgical Aspects of Parkinson's Syndrome."

Dr. W. James Gardner, Department of Neurological Surgery, Cleveland Clinic, Cleveland, Ohio.

2:30 Address: "The Significance of Certain Developments in Electrocardiography in The Analysis of Clinical Problems."

Dr. Raymond D. Pruitt, Assistant Professor of Medicine, Mayo Foundation, University of Minnesota Graduate School of Medicine, Rochester, Minnesota.

3:00-4:00 *Intermission for Review of Exhibits*

4:00 Address: "The Selection of Cases for The Lempert Fenestra Nov-Ovalis Operation for Restoration of Serviceable Unaided Hearing in Patients with Clinical Otosclerosis."

Dr. Julius Lempert, Lempert Institute of Otology, New York, New York.

4:30 Address: "Trichinosis."

Dr. Sylvester E. Gould, Associate Professor of Pathology, Wayne University College of Medicine, Detroit, Michigan.

5:00 Address: "Anesthetic Procedures in The Diagnosis and Treatment of Disease."

Dr. Charles F. McCuskey, Associate Clinical Professor of Surgery (Anesthesia), University of Southern California School of Medicine, Los Angeles, California; President, 1948, The American Society of Anesthesiologists, Inc.

Dinner Intermission

7:30 P.M.

7:30 Address: "The Treatment of Exophthalmic Goiter with Radioiodine."

Dr. Mavis P. Kelsey, Mayo Clinic; Instructor of Medicine, University of Minnesota Graduate School of Medicine, Rochester, Minnesota.

8:00 Address: "Plans for Medical Care of The Veteran."

Dr. Paul B. Magnuson, Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, Washington, D.C.

8:30 Address: "Dynamic Therapeutics in Chronic Disease."

Dr. Howard A. Rusk, Professor of Rehabilitation and Physical Medicine, New York University College of Medicine, New York, New York.

9:00 Address: "Recent Progress in Nutrition."

Dr. Tom D. Spies, Hillman Hospital, Birmingham, Alabama; Professor and Head of the Department of Nutrition and Metabolism, Northwestern University Medical School, Chicago, Ill.

Wednesday, November 10

8:00 A.M.

8:00 Diagnostic Clinic: "Use and Abuse of Antipernicious Anemia Substances."

DR. ROBERT W. HEINLE, Associate Professor of Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

8:30 Diagnostic Clinic: "Testicular Dysfunction."

DR. E. PERRY MCCULLAGH, Section of Endocrinology and Metabolism, Cleveland Clinic, Cleveland, Ohio.

9:00 Diagnostic Clinic: "Cancer of The Larynx."

DR. CHEVALIER L. JACKSON, Professor of Laryngology and Broncho-Esophagology, Temple University School of Medicine, Philadelphia, Pennsylvania.

9:30 Diagnostic Clinic: "The Management of The Elderly Patients."

DR. EDWARD L. BORTZ, Chief, Medical Service "B" in the Lankenau Hospital; Associate Professor of Medicine, University of Pennsylvania Graduate School of Medicine, Philadelphia, Pennsylvania; Immediate Past President, American Medical Association.

10:00-11:00 *Intermission for Review of Exhibits*

11:00 Diagnostic Clinic: "The Treatment of Bladder Neck Obstruction And Evaluation of Various Methods in Use Today."

DR. HERMAN L. KRETSCHMER, Professor of Urology (Surgery), University of Illinois College of Medicine, Chicago, Illinois; President, Interstate Postgraduate Medical Association of North America.

11:30 Diagnostic Clinic: "Extreme Insufficiency of The Anterior Lobe of The Pituitary Gland (Simmonds' Disease)."

DR. RAY F. FARQUHARSON, Professor of Medicine, University of Toronto Faculty of Medicine, Toronto, Ontario, Canada.

Noon Intermission

1:30 P.M.

1:30 Diagnostic Clinic: "The Present Status of Surgical Treatment of Intractable Asthma."

DR. BRIAN B. BLADES, Professor of Surgery, The George Washington University School of Medicine, Washington, D.C.

2:00 Diagnostic Clinic: "Surgery of The Colon;—Selection of Cases and Operations of Choice for Malignant Lesions."

DR. CHARLES W. MAYO, Surgical Section, Mayo Clinic; Associate Professor of Surgery, University of Minnesota Graduate School of Medicine, Rochester, Minnesota.

2:30 Diagnostic Clinic: "The Use of Prefrontal Lobotomy in The Treatment of Pain."

DR. WALTER FREEMAN, Professor of Neurology, The George Washington University School of Medicine; Consultant and Chief of Service in Neurology, University Hospital; Chief of Service in Neurology, Gallinger Hospital, Washington, D.C.

DR. JAMES W. WATTS, Clinical Professor of Neurosurgery, The George Washington University School of Medicine; Associate in Neurology, University Hospital; Associate in Neurosurgery, Gallinger Hospital, Washington, D.C.

3:00-4:00 *Intermission for Review of Exhibits*

4:00 Address: "Surgical Treatment of Cardiospasm."

MR. RODNEY MAINGOT, F.R.C.S., London, England.

4:30 Address: "Exophthalmos." (The Schneider Foundation Eye Presentation.)

DR. DERRICK VAIL, Professor of Ophthalmology, Northwestern University Medical School, Chicago, Illinois.

5:00 Address: "Bronchostenosis of Inflammatory, Probably Non-specific Origin."

DR. TAGE KJAER, Municipal Clinic for Thoracic Surgery, Oresundshospitalet, Copenhagen, Denmark.

Dinner Intermission

7:30 P.M.

7:00 "Front Line Surgical Service During The Okinawa Battle." Motion Picture and Narration by

DR. WILLIAM CARMEL ROBERTS, Director, William Carmel Roberts Clinic, Panama City, Florida.

7:30 Address: "The Present Status of Cancer Therapy."

DR. R. LEE CLARK, JR., Director and Surgeon-in-Chief, M. D. Anderson Hospital for Cancer Research, University of Texas, Houston, Texas.

8:00 Address: "Fluorine in Dental Caries Control."

DR. H. TRENDLEY DEAN, Dental Director, U.S. Public Health Service; Chief, Dental Research Section Experimental Biology and Medicine Institute, National Institute of Health, Bethesda, Maryland.

8:30 Address: "Polypoid Disease of The Colon: What Should We Do About It?"

DR. LOUIS A. BUIE, Mayo Clinic; Professor of Proctology, University of Minnesota Graduate School, Rochester, Minnesota.

9:00 Address: "Present Status of The Treatment of Advanced Malignant Disease with Synthetic Estrogens and X-ray Therapy."

DR. FRANK E. ADAIR, Associate Professor of Clinical Surgery, Cornell University Medical College; Attending Surgeon and Executive Officer, Medical Board, Memorial Hospital, New York, New York.

Thursday, November 11

8:00 A.M.

8:00 Diagnostic Clinic: "The Surgical Aspects of Duodenal Ulcer, Including Complications."

DR. GEORGE G. FINNEY, Assistant Professor of Surgery, the Johns Hopkins University School of Medicine, Baltimore, Maryland.

8:30 Diagnostic Clinic: "Disturbances in The Electrolyte Metabolism of Patients with Nephrosis and Chronic Nephritis in Relationship to Treatment."

DR. IRVINE MCQUARRIE, Professor of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota.

9:00 Diagnostic Clinic: "Clinic Illustrating Newer Methods in The Treatment of Hematologic Disorders."

DR. CYRUS C. STURGIS, Professor of Internal Medicine, Director of Simpson Memorial Institute and Chairman of the Department of Internal Medicine, University of

Michigan Medical School, Ann Arbor, Michigan.

9:30 Diagnostic Clinic: "Gallbladder Disease."

DR. WARREN H. COLE, Associate Dean of the College of Medicine, Professor of Surgery and Head of the Department, University of Illinois College of Medicine; Medical Director and Head of the Operating Room, Research and Educational Hospital, Chicago, Illinois.

10:00-11:00 *Intermission for Review of Exhibits*

11:00 Diagnostic Clinic: "Digestive Diseases."

DR. WALTMAN WALTERS, Mayo Clinic; Professor of Surgery, University of Minnesota Graduate School of Medicine, Rochester, Minnesota.

11:30 Diagnostic Clinic: "Multiple Sclerosis."

DR. HANS H. F. REESE, Professor of Neuropsychiatry, University of Wisconsin Medical School, Madison, Wisconsin.

Noon Intermission

1:30 P.M.

1:30 Diagnostic Clinic: "Diseases of The Spleen."

DR. FRANK H. LAHEY, Director, Lahey Clinic; Surgeon, New England Deaconess and New England Baptist Hospitals, Boston, Massachusetts.

2:00 Diagnostic Clinic: "Surgical Diseases of The Lungs."

DR. EVARTS A. GRAHAM, Bixby Professor of Surgery and Head of the Department, Washington University School of Medicine, St. Louis, Missouri; President-Elect, Interstate Postgraduate Medical Association of North America.

2:30 Diagnostic Clinic: "The Diagnosis and Treatment of Mediastinal Tumors."

DR. ALTON OCHSNER, William Henderson Professor of Surgery, Tulane University of Louisiana School of Medicine, New Orleans, Louisiana; Director of Section on General Surgery, Ochsner Clinic, New Orleans, Louisiana.

3:00-4:00 *Intermission for Review of Exhibits*

4:00 Address: "Total Reconstruction of The Face in Burns."

SIR ARCHIBALD McINDOE, C.B.E., M.S., F.A.C.S., F.R.C.S., London, England; Plastic Surgeon St. Bartholomew's Hospital; Surgeon-in-Charge Queen Victoria Hospital, East Grinstead. Consultant in Plastic Surgery to the Royal Air Force.

4:30 Address: "Version."

DR. CARL HENRY DAVIS, Wilmington, Delaware, Obstetrician and Gynecologist, St. Francis Hospital; Gynecologist, Delaware Hospital; Consulting Obstetrician and Gynecologist, Wilmington General Hospital; Formerly Clinical Professor of Obstetrics and Gynecology, Marquette University School of Medicine, Milwaukee, Wisconsin.

5:00 Address: "The Practical Application of Isoimmunization by the Rh Factor."

DR. PHILIP LEVINE, Director, Biological Division, Ortho Research Foundation, Raritan, N. J.

ASSEMBLY DINNER

The Rainbow Room—Hotel Carter—Informal

7:00 P.M.

For members of the profession, their ladies and friends.

Program

Welcome, and presentation of President Dr. Herman L. Kretschmer, Chicago, Illinois, by

DR. DAVID A. CHAMBERS, President, Academy of Medicine of Cleveland and Cuyahoga County Medical Society, Cleveland, Ohio; General Chairman, 1948 Cleveland Assembly of the Interstate Postgraduate Medical Association of North America.

Addresses

"Medicine and Philately."

DR. HERMAN L. KRETSCHMER, President, Interstate Postgraduate Medical Association of North America; Professor of Urology (Surgery), University of Illinois College of Medicine, Chicago, Illinois.

Presentation of Dr. Evarts A. Graham, President-Elect of the Interstate Postgraduate Medical Association of North America; Bixby Professor of Surgery and Head of the Department, Washington University School of Medicine, St. Louis, Missouri.

"Greetings from England."

SIR ARCHIBALD McINDOE, C.B.E., M.S., F.A.C.S., F.R.C.S., London, England; Plastic Surgeon St. Bartholomew's Hospital; Surgeon-in-Charge Queen Victoria Hospital, East Grinstead. Consultant in Plastic Surgery to the Royal Air Force.

"My Life As A Spy."

By an espionage agent of one of our Allies—a thriller—. *(Name withheld)*

Friday, November 12

8:00 A.M.

8:00 Diagnostic Clinic: "Management of Renal Lithiasis."

DR. CHARLES C. HIGGINS, Department of Urology, Cleveland Clinic, Cleveland, Ohio.

8:30 Diagnostic Clinic: "Gouty Arthritis."

DR. JOHN H. TALBOT, Professor of Medicine, University of Buffalo School of Medicine, Buffalo, New York.

9:00 Diagnostic Clinic: "Important Points in The Differential Diagnosis Between Malignant and Benign Breast Lesions."

DR. CHARLES F. GESCHICKTER, Professor of Pathology, Georgetown University School of Medicine, Washington, D.C.

9:30 Diagnostic Clinic: "Cancer of the Urinary Bladder."

DR. GILBERT J. THOMAS, Associate Clinical Professor of Surgery (Urology), University of Southern California School of Medicine, Beverly Hills, California.

10:00-11:00 *Intermission for Review of Exhibits*

11:00 Diagnostic Clinic: "Diagnosis and Treatment of Cirrhosis of The Liver."

DR. W. PHILIP CORR, Associate Professor of Medicine, College of Medical Evangelists, School of Medicine, Riverside, California.

11:30 Diagnostic Clinic: "Painful Conditions of The Foot and Ankle."

DR. PHILIP LEWIN, Professor of Bone and Joint Surgery, Northwestern University Medical School, Chicago, Illinois.

Noon Intermission

1:00 P.M.

1:00 Diagnostic Clinic: "Radio-active Iodine for The Treatment of Thyroid Disease."

DR. GEORGE CRILE, JR., Cleveland Clinic, Cleveland, Ohio.

1:30 Address: "Diagnosis and Surgical Treatment of Intrathoracic Extrapulmonary Tumors."

DR. STUART W. HARRINGTON, Mayo Clinic; Professor of Surgery, University of Minnesota Graduate School, Rochester, Minnesota.

2:00 Address: "The Clinical Management of Diarrheas."

DR. CHAUNCEY D. LEAKE, Vice-President, The University of Texas—Medical Branch; Professor of Pharmacology, University of Texas School of Medicine, Galveston, Texas.

2:30-3:00 *Intermission for Review of Exhibits*

Dismantling of the exhibits will begin at 3:00 P.M.

3:00 Address: "Prophylaxis and Treatment of Eclampsia."

DR. WILLIAM F. MENGERT, Professor of Obstetrics and Gynecology and Chairman of the Department, Southwestern Medical College of Southwestern Medical Foundation, Dallas, Texas.

3:30 Address: "Surgical Treatment of Polyps of The Colon."

DR. FRED W. RANKIN, Lexington, Kentucky, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Kentucky.

4:00 Address: "The Emergency Treatment of Apoplexy."

DR. GEZA DE TAKATS, Associate Professor of Surgery, University of Illinois College of Medicine, Chicago, Illinois.

4:30 Diagnostic Clinic: "Surgery of the Heart with Special Reference to Coronary Artery Disease."

DR. CLAUDE S. BECK, Professor of Neurosurgery, Western Reserve University School of Medicine, Cleveland, Ohio.

PLACE OF ASSEMBLY

The members of the Assembly will have the pleasure of convening in the Cleveland Public Auditorium. Its equipment is modern in every detail and meets every requirement to carry on the Assembly successfully, such as acoustics, seating capacity, large stage, temporary hospital, electrical equipment, etc.

The opening session of the scientific and clinical program will begin promptly at 8:00 o'clock Tuesday morning, November 9, 1948.

Registration

The registration fee for the four-day session is $5.00.

Doctors in uniform, Internes, Graduate Nurses, Technicians and Dietitians will be admitted upon the payment of $1.00 registration fee. Senior medical students and senior student nurses will be admitted free of charge Friday, November 12, only, and upon presentation of proper credentials at the registration desk.

Guests of the Association (i.e., those appearing on the scientific and clinical program) are requested to register.

Life Members are requested to show their Life Membership cards at the time of registration.

Cleveland physicians are urged to register in advance of the opening of the Assembly, Monday afternoon, November 8, at the Hotel Cleveland.

Place of Registration

The main Registration Department will be at the Cleveland Public Auditorium. This department will open Tuesday morning, November 9.

Everyone attending the Assembly must register. A distinctive badge will be issued to all professional men and women at the time of registration, and a distinctive button will be issued to the senior medical students and senior student nurses. No one will be permitted to attend the scientific and clinical sessions or visit the exhibits unless a badge or button is shown. It is suggested that the badge or button be worn. Your cooperation in this matter is requested.

Technical Exhibits

CLEVELAND ASSEMBLY
INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION

ABBOTT LABORATORIES
North Chicago, Ill.
Booths 133-134

You are cordially invited to inspect the entirely new exhibit prepared for this meeting. We are confident it will excite your attention and interest. Abbott Professional Service Representatives in attendance will welcome an opportunity to discuss the newer medical developments with you. Make a visit to the Abbott booth A MUST in your technical exhibit itinerary.

THE ALKALOL COMPANY
Taunton, Mass.
Booth 22

ALKALOL, an alkaline, nontoxic, bland solution for the treatment of the mucous membranes of the eyes, nose and throat; and as an effective wet dressing in many indications. Alkalol is an excellent vehicle for penicillin or sulfathiazole. IRRIGOL, a powder which in solution makes an aseptic, slightly astringent vaginal douche. It is also widely used for colonic irrigations and rectal enemas. ALKALOL and IRRIGOL ethically promoted since 1896.

W. D. ALLISON COMPANY
Indianapolis, Ind.
Booths 111-112

Two completely new developments in medical furniture will be displayed for the first time at this year's I.P.M.A. meeting. These new products are a complete suite of examination room furniture, and a consultation room desk. Their modern professional design gives them a clear-cut beauty that is different! They merit your consideration, and we look forward to seeing you in Cleveland.

A. S. ALOE COMPANY
St. Louis, Mo.
Booths 105-106-107

The representatives of the A. S. Aloe Company will welcome their friends at their booths, where they will have on display a representative cross section of our complete line of Surgical, Hospital, and Laboratory equipment and supplies. Featured will be a complete line of government surplus instruments available at the present time—especially selected, fully certified instruments at approximately one half the regular cost.

AMERICAN HOSPITAL SUPPLY CORPORATION
Evanston, Ill.
Booth 101

The American Hospital Supply Corporation will exhibit the following: the full range of Baxter Parenteral Products—Intravenous Solutions, including the new Protein Hydrolysate Baxter, Blood Transfusion and plasma equipment plus disposable accessories for the administration thereof; Blood grouping Serums that excel in accuracy, speed and dependability. The new Tomac Oxygen-Nebulizer for inhalation therapy that effects a 50 per cent saving in gas and drugs; and certain selected Tomac products that simplify, if not solve many hospital problems.

AMERICAN OPTICAL COMPANY
Buffalo, N. Y.
Booth 218

The Scientific Instrument Division of the American Optical Company will exhibit the new Spencer Phase Microscope, with a selection of objectives in dark, medium, and B-minus contrast. In addition, the pocket-sized Hb-Meter, which allows rapid hemoglobin determinations to be made at the bedside, will be on display, as well as the Bright-Line Haemacytometer, and several standard microscopes of Spencer quality.

AMES COMPANY, INC.
Elkhart, Ind.
Booth 220

Ames Company representatives will be glad to discuss Decholin, the standard hydrocholeretic agent for the treatment of biliary tract diseases, and Decholin Sodium, pure sodium dehydrocholate. They will be demonstrating Clinitest and Hematest—simplified tests for the detection of urine sugar and occult blood.

APPLETON-CENTURY-CROFTS, INC.
New York, N. Y.
Booth 126

Such new 1948 titles as Maingot's *Abdominal Operations;* Morrison's *Ear, Nose and Throat;* Cole and Elman's *General Surgery;* Burstein and Bloom's *Electrocardiography Atlas;* Zinsser's *Bacteriology* (under new authorship); and Thomson and Negus' *Nose and Throat* will be featured in the Appleton-Century-Crofts exhibit in Booth 126. Also on display are the latest editions of Osler's *Medicine* and Kolmer's popular monograph on *Antibiotic Therapy* together with other standard titles regularly advertised in POSTGRADUATE MEDICINE.

ARMOUR LABORATORIES
Chicago, Ill.
Booths 35-36

The Armour Laboratories, a pioneer in the field of Endocrinology, will welcome members of the Interstate Postgraduate Medical Association to visit the Armour exhibit in Booths 35 and 36. If you have not received copies of Armour booklets on "THE THYROID GLAND," "Function and Malfunction of the Biliary System," and the "Armour ATLAS of Hematology," you may secure them at the Armour booths.

THE GORDON ARMSTRONG COMPANY, INC.
Cleveland, O.
Booth 56

The Armstrong X-4 Baby Incubator, which will be on exhibit at the I.P.M.A. Meeting, is designed to furnish safe heat, humidity and oxygen for any newborn baby. They are used not only for premature babies, but for any underweight or debilitated baby that may need special treatment. The Armstrong X-4 Baby Incubator is the only Baby Incubator ever tested and approved for use with oxygen by Underwriters' Laboratories. It also carries the Seal of Ac-

ceptance of the American Medical Association, and the Approval Seal of the Canadian Standards Association. That the Incubator is both effective and practical is evidenced by the fact that over 5,000 of them are now in use all over the world.

AYERST, McKENNA & HARRISON
New York, N.Y.
Booth 164

"Premarin" (Estrogenic Substances—water soluble), a highly effective and well tolerated preparation of naturally-occurring, orally-active, conjugated estrogens (equine). The potency of "Premarin" is expressed in terms of its principal estrogen, sodium estrone sulfate. "Premarin" is available in tablets of four potencies and also in liquid form.

THE BABEE-TENDA CORPORATION
Cleveland, O.
Booth 222

THE BAKER LABORATORIES, INC.
Cleveland, O.
Booth 192

The Baker display is built around the six-step approach to optimum infant nutrition. An adjusted protein, two carbohydrates, a modified fat, vitamins, soluble mineral salts and iron, coupled with simplicity of preparation and low cost, provide for complete nutrition and insure cooperation in the home. Baker's Modified Milk, liquid or powder, may be used interchangeably from birth to the end of the bottle-feeding period. May we discuss your infant feeding problem with you?

BARD-PARKER COMPANY, INC.
Danbury, Conn.
Booth 82

Genuine Bard-Parker "Rib-Back" surgical knife blades—"the blade that assures cutting efficiency"; surgical knife handles, including long handles for deep surgery, hysterectomy and eye handles and laboratory handles; Bard-Parker Formaldehyde Germicide—a sporicidal solution; instrument sterilizing container; Chlorophenyl, an ideal office and ward instrument disinfectant, Hematologic cases for obtaining bedside blood samples, and pipettes.

A. C. BARNES COMPANY
New Brunswick, N.J.
Booth 213

The A. C. Barnes Company cordially invites all physicians to visit their new exhibit. ARGYPULVIS, a recent addition to the BARNES line, will be featured by a series of illuminated color transparencies depicting an effective new treatment for Trichomonas vaginalis vaginitis. Literature and professional samples will be available. ARGYROL and OVOFERRIN also will be on display. See the BARNES color and sound films—"Cervicitis—Etiology and Treatment," and "Non-Operative Treatment of Paranasal Sinusitis," at the Scientific Motion Picture Exhibit.

BARRY LABORATORIES, INC.
Detroit, Mich.
Booth 161

The Barry Laboratories will display for the consideration of their many physician friends new and modern diagnostic allergy skin testing sets. There will be assortments for all specialties including a special assortment for the general practitioner. The Biological Division of the Barry Laboratories will present a complete line of sterile injectables in multiple dose and ampule vials including a high potency, ready mixed B-Complex solution with a long term potency guarantee. The technical representative of the Barry Laboratories will be on hand to assist all physicians inquiring about their products and services.

BAUER & BLACK
DIVISION OF THE KENDALL COMPANY
Chicago. Ill.
Booth 34

Bauer & Black cordially invites you to inspect famous CURITY line of products for doctors, surgeons and hospitals, including new products—Curity Surgical Felt, the *only* true surgical cotton felt, and Kerlix. In addition, there will be shown the Curity suture line, Curity Wet-Pruf and regular adhesive tape, the Ostic Plaster line, Curity surgical dressings, Tensor Elastic Bandage, Castex, and the rest of a famous line of products. Visit Booth 34.

W. A. BAUM CO., INC.
New York, N.Y.
Booths 71-72

All models of the Lifetime Baumanometer will be displayed and demonstrated for the doctors in attendance. Those who maintain a central examining place will be especially interested in examining the WALL Model Baumanometer. In addition, a full line of accessories—including special infant and child size bloodpressure cuffs—will be available at the Baum booth.

BAYBANK PHARMACEUTICALS, INC.
New York. N.Y.
Booth 117

You are cordially invited to visit our exhibit for up-to-the-minute information on "Vaseline" Sterile Petrolatum Gauze Dressings, for topical treatment of burns and wounds and for many uses in surgery; NARAKON Nasal Solution Plain or Compound, indicated in upper respiratory affections; LORAKON Collutory, the distinctive ethical and highly efficient gargle and mouth wash; and TERAKON Paste and Ointment Base, the unique universal dermatologic vehicle and improvement over Lassar's Paste.

BECTON, DICKINSON & CO.
Rutherford, N.J.
Booths 66-67

BILHUBER-KNOLL CORPORATION
Orange, N.J.
Booth 115

For information on the latest developments of the medicinal chemicals of Bilhuber-Knoll Corporation, visit our booth. Your discussions will be welcomed on Oenethyl, their new vasopressor; Octin, antispasmodic; Metrazol, analeptic and antianoxiant; Theocalcin, diuretic and myocardial stimulant, and Dilaudid, analgesic and cough sedative. These and their other dependable prescription chemicals are prescribed alone or in combinations with other drugs as the individual patient may require.

THE BIRTCHER CORPORATION
Los Angeles, Calif.
Booth 202

Special attention will be focused on new items at The Birtcher Corporation Booth. The new Blendtome "Truly Portable" Electro-Surgical Unit, light weight with big unit

performance, invites your inspection. See the new Improved Hyfrecator, restyled and redesigned by Walter Dorwin Teague, internationally famous industrial designer. Examine the Crystal Bandmaster S. W. Diathermy bearing F.C.C. Type Approval. Don't fail to investigate the Birtcher Electro-Surgical Unit, outstanding for transurethral prostatectomy and general surgery. A cordial invitation extended to all.

THE BLAKISTON COMPANY
Philadelphia, Pa.
Booth 141

THE BLAKISTON COMPANY will have an attractive exhibit of new and standard books. All visitors are cordially invited. In addition, there will be advance information on forthcoming titles of importance to the profession. Ask to see Ricci—*Diagnosis in Gynaecology;* Smith and Gault—*Essentials of Pathology;* Stitt, Clough and Branham—*Practical Bacteriology;* Lillie—*Histopathologic Technic;* Epstein—*Strabismus;* Fuchs—*Diseases of the Fundus Oculi;* Fishbein—*Medical Writing,* and many others.

BORCHERDT MALT EXTRACT COMPANY
Chicago, Ill.
Booth 162

New advances in nutritional supplements for pediatric practice will be featured by Borcherdt Malt Extract Company. These include: Malt Soup Extract, now in two forms, Liquid and Powder, for constipation in bottle fed infants; Livipeptone, a high liver, high iron, and high vitamin B-Complex mixture in palatable form for both bottle fed infants and older children; and Thiamalt-Cumaltron mixture, providing a potent copper-iron hematinic and vitamin B-Complex combination, for undernourished children.

THE BORDEN COMPANY
New York, N.Y.
Booth 21

Meet BIOLAC, a liquid modified milk for infant feeding; DRYCO with its formula flexibility; MULL-SOY for your milk allergic patients; powdered whole milk KLIM; the improved milk sugar, BETA LACTOSE; and the MERRELL-SOULE PROTEIN and LACTIC ACID MILKS. We invite your attention to GERILAC, a vitamin-fortified powdered milk for well-rounded nutrition in convalescence, pre- and postoperative diets, geriatrics, pregnancy and lactation, and soft and liquid diets.

BREWER & COMPANY, INC.
Worcester, Mass.
Booths 80-81

This exhibit consists of specialties centering around Thesodate, the original enteric-coated tablet of Theobromine Sodium Acetate, and Luasmin, a combination of theophylline sodium acetate, phenobarbital, and ephedrine for the treatment of asthma. Also, Brewer capsules and ampules, other specialties including Soduxin (Sodium Succinate—Brewer) and standard pharmaceuticals manufactured by Brewer and Company, Inc., including a complete line of vitamin preparations for internal use and injection. Gel-ets, the newest mode in oral vitamin therapy and Amchlor, enteric coated one-gram tablets of ammonium chloride are also featured.

BRISTOL LABORATORIES, INC.
New York, N. Y.
Booths 108-109

Bristol Laboratories, Inc.'s exhibit will be devoted to the display of many of its antibiotic and pharmaceutical products. Featured will be FLO-CILLIN "96" available in a 10 cc. vial, a 1 cc. cartridge and a Disposable Syringe Package; VYTINIC, a highly palatable liquid hematinic with folic acid; PALAPENT, a palatable elixir of pentobarbital sodium, U.S.P., an excellent prescription vehicle; ALMINATE TABLETS, Bristol's brand of aluminum dihydroxy aminoacetate for the management of peptic ulcer, gastritis and hyperacidity and BARBONATE TABLETS, a companion product containing Alminate with the combination of phenobarbital and belladonna alkaloids to give it an antispasmodic and sedative action. Qualified representatives will be on hand to answer questions and to assist the medical profession.

BRISTOL-MYERS COMPANY
New York, N.Y.
Booth 2

BRISTOL-MYERS COMPANY cordially invites you to visit its booth where BRISTOL-MYERS' representatives will be in attendance to extend a hearty welcome to all visitors and to answer any questions pertaining to SAL HEPATICA and other famous products on display.

BROOKS APPLIANCE COMPANY
Chicago, Ill.
Booth 217

The Brooks Appliance Company will exhibit the following merchandise: Trusses, Bandages, Proctologic Instruments, Elastic Hosiery, and Syringes and Needles. Mr. W. C. Ayer will have charge of the exhibit and will describe in detail the technic of applying the combination pressure bandages, Contura plus Pressoplast, which are used in treating Osteo-Arthritis of the Knee Joints, Phlebitis and Leg Ulcers.

THE BURDICK CORPORATION
Milton, Wis.
Booth 144

The Burdick Corporation will exhibit their complete line of Physical Therapy Equipment. A feature of special interest will be the X 85 Diathermy Unit which has the acceptance of the Council of Physical Medicine, Underwriters Laboratories and the Federal Communications Commission.

BURROUGHS WELLCOME & CO. (U.S.A.), INC.
New York, N.Y.
Booths 131-132

Large THREE-DIMENSIONAL color photography will be used to illustrate the important features of "Wellcome" GLOBIN INSULIN. Be sure to stop by at our booths to see this unusual development.

CAMBRIDGE INSTRUMENT COMPANY, INC.
New York, N.Y.
Booth 156

Cambridge Instrument Company, Inc., will exhibit its line of diagnostic instruments. Among those shown will be the Cambridge "Simpli-Trol" light-weight, portable Electrocardiograph and Electrocardiograph-Stethograph with pulse recorder, the new Cambridge Electrokymograph for recording heart border motion, and the Cambridge Plethysmograph, a new calibrated instrument which makes quantitative and reproducible records. Also on display will be the Cambridge "All Electric" Mobile Electrocardiograph-Stethograph with pulse recorder for hospital and institutional use.

CAMEL CIGARETTES
MEDICAL RELATIONS DIVISION
New York, N.Y.
Booths 61-62

Camel Cigarettes will present a dramatic full color review of their recent medical research on smoking, as well as the details of the nationwide survey showing that "More Doctors Smoke Camels Than Any Other Cigarette." Another panel will illustrate the absorption of nicotine in the respiratory tract. Representatives will be present.

CAMERON HEARTOMETER COMPANY
Chicago, Ill.
Booth 207

See the improved Heartometer, a scientific precision instrument for accurately recording systolic and diastolic blood pressures, also furnishing a permanent graphic record of the pulse rate, disturbances of the rhythm, myocardial response, the aetion of the valves, as well as peripheral vascular circulation. The Heartometer clearly reveals heart disturbances in both early and advanced stages, and is of great value in checking the progress of medication and treatment.

CAMERON SURGICAL SPECIALTY COMPANY
Chicago, Ill.
Booth 11

Have a demonstration of the Cameron Cauterodynes and Cauteradios for Electro-surgery, Electro-cauterization and Electro-coagulation; Coagulair-Sigmoidoscope; Electro-Diagnostic Lamps and Instrument Sets; Radiolucent Cannula; the new Flexible Gastroscopes with treated and coated lenses; Flexible Esophagoscope; Bronchoscopes-Esophagoscopes-Laryngoscopes; Mirror Headlites; Binocular Spectacle Loupe; Magniscope and other Specialties.

S. H. CAMP AND COMPANY
Jackson, Mich.
Booth 160

A series of illuminated transparencies depicting anatomic conditions before and after application of Camp scientific supports will be displayed. Experts in attendance will answer questions pertaining to the scientific application of anatomical supports and advise regarding their availability in the Authorized Service departments of stores throughout the country.

CANADIAN RADIUM & URANIUM CORP.
New York, N.Y.
Booth 103

American-mined and American-refined radium now available to the medical profession in any form and any type of container. Old radium exchanged for new. A complete line of radium instruments, accessories, and protective equipment. See our new-type radium D applicator for treatment of ophthalmic conditions—a revolutionary advance in radiation therapy. For details, visit our booth.

CARNATION COMPANY
Los Angeles, Calif.
Booths 148-149

You are invited to visit Booths 148 and 149 where you will see an attractive display on Carnation Evaporated Milk—"the milk every doctor knows." Some valuable information on the use of this milk for infant feeding, child feeding, and general diet will be presented and the method by which Carnation is generously fortified with pure crystalline Vitamin D—400 U.S.P. units per reconstituted quart—will be explained. Interesting literature will also be available for distribution.

G. W. CARNRICK COMPANY
Newark, N. J.
Booth 6

Professional representatives will welcome the opportunity of discussing with I.P.M.A. members newly-introduced GWC ethical preparations including Thelestrin in Aqueous Suspension, Lutestrogen in Sesame Oil, Neohemochromin Capsules, Dicalossa Tablets, Hemochromin with B-Complex and Vitamin C. Descriptive literature and complimentary supplies of numerous GWC products, including Enterosols Hormotone "T," are available on request.

THE CENTRAL PHARMACAL COMPANY
Seymour, Ind.
Booth 199

The Central Pharmacal display will feature the Synophylate line. Synophylate or Theophylline Sodium Glycinate represents a new and greatly improved theophylline compound for the treatment of asthmatic and cardiac conditions. These products bear the seal of acceptance of the American Medical Association. Entabs and Syrup Neocylate will also be displayed. These products also represent advancements in an important field of therapy; namely, rheumatic fever and allied conditions. Other products for modern therapy will also be shown.

CIBA PHARMACEUTICAL PRODUCTS, INC.
Summit, N. J.
Booths 12-13

Ciba Pharmaceutical Products, Inc. invites you to visit their exhibit for latest information about PYRIBENZAMINE, the antihistaminic for relieving symptoms of allergy. Also displayed will be PRIVINE Hydrochloride, an effective, long-lasting nasal vasoconstrictor, and METANDREN LINGUETS, the most potent orally active androgenic hormone in a form suitable for sublingual absorption. Representatives in attendance will be very glad to answer any questions you may have concerning these and other Ciba products.

WARREN E. COLLINS, INC.
Boston, Mass.
Booth 136

WARREN E. COLLINS, INCORPORATED cordially invites you to visit a showing of fine scientific respiration apparatus. These include the Drinker-Collins Duplex Respirator with the latest Minnesota Sloping Front; the Benedict-Roth metabolism apparatus for routine metabolism work and lung function studies; the Collins Open-Top Oxygen Tent and the first showing at the Assembly of the I.P.M.A. of the new waterless Collins Metabolex. The Metabolex has the seal of approval of the Council on Physical Medicine of the A.M.A. Skilled technicians will be in attendance to welcome you.

CREAM OF WHEAT CORPORATION
Minneapolis, Minn.
Booth 110

The Cream of Wheat Corporation cordially invites you to visit their booth to obtain first hand information of both Enriched 5 Minute CREAM OF WHEAT and Regular CREAM OF WHEAT, also ZING! Wheat Germ. You will find

interesting educational material, quantities of which may be obtained by registering. Edward R. Shopp, Director of their Health Education Department, will be in charge.

DAVIES, ROSE & COMPANY, LTD.
Boston, Mass.
Booth 169

It is a pleasure to again be invited to participate in the Annual Assembly of the I.P.M.A. Our representatives, Messrs. H. V. Orne and W. E. Purinton, will be in attendance to welcome you and to explain the merits of the products exhibited, particularly our Pills Stramonium, 0.15 gm. (approx. 2½ gr.), now extensively employed in the sequelae of epidemic encephalitis.

F. A. DAVIS COMPANY
Philadelphia, Pa.
Booth 135

NEW MEDICAL BOOKS—visit Booth 135. *Segmental Neuralgia*—Judovich; *Arthritis*—Bach; *Gallbladder Diseases*—Behrend; *Pre- and Postoperative Care*—Tourish; *General Medicine*—Reimann; *Treatment*—Gruber; *Peripheral Vascular Diseases*—Kramer; *Pediatric Progress*—Litchfield and Dembo; *Medical Diagnosis*—Loewenberg; *Urology*—McCrea; *Dermatology*—Greenbaum; *Cystoscopy*—McCrea; *Diseases of the Chest*—Judd; *Rhinoplasty*—Maliniac; *Gonioscopy*—Troncoso; *Reparative Surgery*—May; *Radiology*—Pillmore; *Diagnostic Signs*—Robertson, and *Cardiovascular Disease*—Stroud.

DAVIS & GECK, INC.
Brooklyn, N.Y.
Booths 208-209

Davis & Geck, Inc., manufacturers of sterile surgical sutures, will present an armamentaria of suture-needle combinations specifically prepared for every type of surgery. Literature on sutures and wound healing will be available. This will include reprints and monographs as well as leaflets dealing with the specific products. Subjects selected from the D & G Surgical Film Library will be presented in the D & G Cinema Room. Programs and catalogs explaining this service may be obtained at the booth.

THE DENVER CHEMICAL MFG. CO., INC.
New York, N.Y.
Booth 225

Galatest for the instantaneous determination of urine sugar, and Acetone Test (Denco) for the detection of acetone in urine will be exhibited. You are cordially invited to visit our booth for demonstration of these "spot tests" for sugar and acetone. Galatest and Acetone Test (Denco) offer advantages of accuracy, simplicity and economy in routine urinalysis.

DePUY MANUFACTURING COMPANY
Warsaw, Ind.
Booths 73-74

DePuy will have on display, for your consideration, Modern Fracture Appliances. The new improved Lorenzo Lag Screw for Subtrochanteric fractures. Also Blount Plates, Moore Plates, and the improved Blade Plate Driver and Extractor. Another thing of great interest to the profession will be the new Jasper Surgical Steinman pin cutter. Mr. V. C. Moss and J. E. Hart will answer any of your questions.

DEVEREUX SCHOOLS
Devon, Pa.
Booth 84

Devereux Schools provide the physician with facilities for the education and treatment of children having academic or emotional difficulties. Twelve Devereux Schools in Pennsylvania and California offer a controlled environment and modern training shaped to the needs of each child. A psychiatrist, two physicians, and a psychologist, all in residence, cooperate with the referring physician in his plans for the child's training and care. Representatives will gladly answer questions or discuss how Devereux may serve you and your patients. John M. Barclay in charge.

THE DeVILBISS COMPANY
Toledo, O.
Booths 49-50

Kodachrome transparencies depicting the distribution of aerosols in the lungs and bronchi are features of The DeVilbiss Company exhibit. This data supports clinical findings and experimental work with aerosols of penicillin, streptomycin, epinephrine and other substances. Other features are x-rays and transparencies that indicate the superior coverage and penetration derived by atomization in the nasal and sinus areas. Instruments for all types of spray application will be displayed.

THE DIETENE COMPANY
Minneapolis, Minn.
Booth 27

Visit The Dietene Company exhibit and discover that really palatable high protein diet supplement—MERITENE. Smell it—taste it—and be convinced. Also see the personal type diet service that is available, without charge, to physicians. DIETENE Reducing Supplement and the 1,000 calorie Dietene Reducing Diet will also be on display. Both MERITENE and DIETENE are Council-Accepted.

DOAK COMPANY, INC.
Cleveland, O.
Booth 175

Colloids of bismuth, calcium, iodine and iron for parenteral administration in the treatment of arthritis, syphilis, calcium and iodine deficiency. Dermatological preparations for treatment of various skin manifestations.

DOHO CHEMICAL CORPORATION
New York, N.Y.
Booth 14

The makers of AURALGAN are featuring at this meeting their new sulfa preparation O-TOS-MO-SAN, indicated in the treatment and control of chronic suppurative ears. Also, Mallon, Division of Doho, is introducing our new topical anesthesia, RECTALGAN for relief of pain and itching in hemorrhoids and pruritis. Our representatives will be happy to explain in detail the workings of these medications. Also, to distribute hospital aural instruction charts and other charts of anatomic and pathologic diseases of the ear.

DUREX PRODUCTS, INCORPORATED
New York, N.Y.
Booth 198

Contraceptive specialties by Durex will be more than worthwhile investigating. The Bow-Bend Diaphragm (hinged rim) will be of particular interest. Complete contraceptive sets contained in the new compact and sanitary Duracase will be appreciated by the physician and patient

alike. The latest clinical information on both Lactikol Jelly and Lactikol Creme will be available.

E & J MANUFACTURING CO.
Glendale, Calif.
Booth 190

New E & J developments in respiratory equipment will be displayed by the E & J Manufacturing Company, as well as various models of the E & J Resuscitator-Inhalator-Aspirator. The exhibit will feature the E & J Bassinet Model Resuscitator-Inhalator-Aspirator which provides for adjustable heating, and the E & J Pressure Nebulizer. Resuscitation of infants will be dramatized by the use of E & J equipment on a plastic doll in which the functioning of the lungs can be observed.

J. H. EMERSON COMPANY
Cambridge, Mass.
Booth 122

The Lung Immobilizer for healing tuberculous cavities by complete arrest of lung movement will be shown in J. H. Emerson Company's display. The Dome Respirator, the Emerson Hot Pack Apparatus, and the latest Emerson Resuscitators will also be demonstrated.

ETHICON SUTURE LABORATORIES
New Brunswick, N. J.
Booths 20-119

Two new Ethicon products—Sterile Pack Sutures and Tantalum Gauze—will be featured at the Ethicon exhibit. Sterile Pack is the new disposable metal suture storage canister containing tubed sutures, packaged sterile. Since its release, Sterile Pack has proved conclusively to hospitals all over the country, that it saves personnel, time and dollars in suture handling; and assures suture sterility. Just released, Tantalum Gauze is a 50 x 50 inch mesh made of .003 inch diameter wire which has been used with great success in the repair of large and recurrent hernias, particularly those characterized by tissue deficiencies.

FELLOWS MEDICAL MANUFACTURING CO., INC.
New York, N.Y.
Booth 212

Fellows Medical Manufacturing Co., Inc. cordially invites you to visit their booth where representatives will be glad to discuss such new products as ArBeC SUPPOSITORIES, Aminophylline-Barbiturate Compound for prompt relief and rest in asthmatic conditions; ERQUA LIQUID and TABLETS (enteric coated)—Sodium Salicylate and Menadione for safer salicylate therapy; IONLEX with FOLIC ACID TABLETS containing Ferrous Gluconate, Liver, Vitamin B-Complex and Vitamin C for secondary anemias; FELLO-SED, Fellows Sedative Elixir containing Chloral Hydrate, Calcium Bromide and Atropine Sulfate in a palatable sugar-free vehicle.

H. G. FISCHER & CO.
Chicago, Ill.
Booth 79

Visitors will be welcome at Booth 79 where H. G. Fischer & Company will display modern units of X-Ray and Physical Therapy equipment including models of F. C. C. Type Approved Diathermy Apparatus with the *patented* induction electrode. Factory trained representatives will be pleased to demonstrate this equipment without obligation.

C. B. FLEET COMPANY, INC.
Lynchburg, Va.
Booth 102

C. B. Fleet Co., Inc. cordially invites you to visit Booth 102. Increasingly, during the past fifty years, to the medical profession, sodium phosphate has come to mean Phospho-Soda (Fleet), the pure, stable, aqueous concentrate of the two U.S.P. sodium phosphates.

FOLEY MANUFACTURING CO.
Minneapolis, Minn.
Booth 104

You are invited to stop at our exhibit. Our representative will be delighted to show you the Baby Size Foley Food Mill, which is just back on the market. It is especially designed for straining individual portions of food for all smooth diets.

GARDNER MANUFACTURING COMPANY
Horicon, Wis.
Booth 179

The Gardner Manufacturing Company has devoted much time the past two years experimenting with an item which, when finished, will remove at least two hours of drudgery a day from hospital personnel, thereby freeing them for greater efforts in other directions. It is hoped a sample of this revolutionary product will be available for a Premier showing at the Cleveland meeting, but nevertheless, the famous Gardner Radiator Enclosures, Ice Chests, Bedside Tables and Storage Cabinets will be exhibited.

GERBER PRODUCTS COMPANY
Fremont, Mich.
Booth 130

Gerber Products Company cordially invites you to visit them and sample the display of their new Strained and Junior Meats for Babies. Both textures are available in beef, veal and liver. Informational literature on prenatal and child care and feeding, analytical data and adult special diet uses of strained foods and cereal samples are available.

OTIS E. GLIDDEN & CO., INC.
Evanston, Ill.
Booth 215

ZymenoL, an emulsion with Brewers' Yeast, provides an effective bowel management routine without irritant, habit-forming drugs or bulking agents. Visit the Glidden booth and sample the new ZymenoL. A new process assures a fine, creamy-white emulsion with exceptional stability and palatability. Descriptive literature and trial supply available. Convince yourself.

GRADWOHL LABORATORIES
St. Louis, Mo.
Booths 223-224

This organization will show its various activities: Training of laboratory technicians; manufacturing of laboratory reagents; publication of a monthly journal called the *Laboratory Digest* and the fourth edition of Gradwohl's textbook *Clinical Laboratory Methods and Diagnosis,* published by the C. V. Mosby Company. Of particular interest will be the demonstration of the Papanicolaou method, stains, etc.

GRUNE & STRATTON, INC.
New York, N.Y.
Booth 174

Outstanding among new publications for postgraduate

teaching to be displayed include: Neuhof—*Venous Thrombosis in Pulmonary Embolism;* Moschcowitz—*Biology of Disease;* Daley and Miller—*Progress in Clinical Medicine;* Hill and Dameshek—*Rh Factor in the Clinic and Laboratory;* Dameshek and Estren—*Spleen and Hypersplenism;* Hoch—*Failures in Psychiatric Treatment;* Wolberg—*Medical Hypnosis* (Volume I, Principles of Hypnotherapy; Volume II, Practice); the 1948 volume of the well known *Progress in Neurology and Psychiatry* edited by Spiegel, and Bellak's *Dementia Praecox.*

HAMILTON MANUFACTURING COMPANY
Two Rivers, Wis.
Booths 88-89-90

Three suites of Examining Room Furniture will be displayed: Deluxe Nu-Tone, the distinctive and modern Nu-Trend and the professionally styled Steeltone. Also shown will be the No. 9905-B-AP All-Purpose Examining Chair-Table, the No. 9595 EENT Cabinet, the representative items of business office and reception room furniture.

HANOVIA CHEMICAL & MANUFACTURING CO.
Newark, N. J.
Booth 227

Don't fail to visit our booth. A complete line of ultra-violet equipment for orificial and general body radiation will be on display, also radiant heat lamps, Germicidal Lamps for the destruction of air-borne bacteria and the new Short Wave Diathermy.

CHR. HANSON'S LABORATORY, INC.
"JUNKET" BRAND FOODS
Little Falls, N. Y.
Booth 7

The importance of rennet in infant and adult nutrition and the value of rennet desserts in both normal and restricted diets will be explained. Enlarged photos illustrate the action of the rennet enzyme in producing softer, finer, more readily-digestible milk curds. Authoritative literature is available describing dietary applications of rennet products. Complimentary packages of "Junket" Rennet Powder and "Junket" Rennet Tablets for the profession.

HARROWER LABORATORY, INC.
Glendale, Calif.
Booth 30

The Harrower technical exhibit presents gastroscopic and acidity control studies relative to Mucotin, a new treatment for peptic ulcer. Proof of the coating action of Mucotin is presented with illuminated gastroscopic pictures. A case history report of a healed gastric ulcer is also illustrated gastroscopically. Mucotin is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

H. J. HEINZ COMPANY
Pittsburgh, Pa.
Booth 211

The H. J. Heinz Company would like you to taste and see all their tin-packed Strained and Junior Foods. Highly fortified Pre-Cooked Cereal Food and Pre-Cooked Oatmeal are on display, too. Our well-known Nutritional Charts, other nutrition information and literature on Heinz Baby Foods are available.

PAUL B. HOEBER, INC.
New York, N. Y.
Booth 59

PAUL B. HOEBER, INC., Medical Book Department of Harper & Brothers, invite you to inspect the entire list of HOEBER publications including these new volumes for the family physician: the new fourth edition of Alvarez' *Introduction to Gastro-Enterology,* Barrow's *Clinical Management of Varicose Veins,* Mengert's *Postgraduate Obstetrics,* and Schwedel's *Clinical Roentgenology of the Heart.* The valuable *Modern Trends* series will be represented by the new MacKenna's *Dermatology,* Sorsby's *Ophthalmology* and McLaren's *Diagnostic Radiology.* Late issues of the Hoeber journals, *Cancer* and *Psychosomatic Medicine* will also be available. Be sure to visit the Hoeber booth.

HOFFMANN-LA ROCHE, INC.
Nutley, N. J.
Booth 75

Roche is happy to exhibit at the meeting of the Interstate Postgraduate Medical Association. They invite all members of the Association to visit Booth 75 where members of the representative staff will be present to discuss such new products as SYRUP SEDULON, a sedative cough preparation especially useful for night cough; THEPHORIN, a different antihistamine which is not likely to cause drowsiness; PRESIDON, the mild new sedative-hypnotic which is not a barbiturate and does not cause "hangover."

HOLLAND-RANTOS COMPANY, INC.
New York, N. Y.
Booth 187

You are cordially invited to register at this booth to receive professional samples of NYLMERATE JELLY, a specific, convenient and inexpensive treatment for trichomonas vaginitis, nonspecific vaginal discharges, and for use in postcauterization therapy. Also on exhibit you will find Koromex Diaphragm Fitting Rings for prescribing the KOROMEX METHOD when conception control is indicated, along with Council-Accepted Koromex Jelly and Cream, Koromex Sets Complete and the different types of Koromex Diaphragms.

HOLLISTER-STIER LABORATORIES
Wilkinsburg, Pa.
Booth 200

In the spotlight at Booth 200 is the new lucite plastic case accommodating an improved integral dropper vial for diagnostic allergens. With allergy an important part of all types of practice, a visit to the home of PERSONALIZED ALLERGY SERVICE will be a must. Ask for your copy of the new booklet, "Ready Reference Reader on Allergy." Trained representatives will be happy to give you information and discuss the complete allergy service of Hollister-Stier Laboratories.

IRWIN, NEISLER & COMPANY
Decatur, Ill.
Booths 18-19

New clinical information on the use of Vertavis in the treatment of severe and resistant hypertension will be presented. Our medical service representatives will be in attendance to give any information desired. Physicians are welcome to visit our Exhibit.

JOHNSON & JOHNSON
New Brunswick, N. J.
Booths 142-143

Hemo-Pak Hemostatic Absorbable Surgical Dressings will be featured at the J & J booths. Representatives also extend a welcome to you to discuss Johnson & Johnson's new, improved adhesive tape, Johnson's Baby Lotion, or to just "visit."

JONES METABOLISM EQUIPMENT CO.
Chicago, Ill.
Booth 100

A special feature at this exhibit will be the new JONES SUPER-MOTOR-BASAL metabolism unit. Trained technicians will demonstrate how this custom-tailored unit, built with a large breathing chamber for large patients and irregular breathers, inside of which is a smaller breathing chamber for smaller patients, operates as "Two-Machines-In-One." With this unit the most extreme cases can be handled with greater precision and minimum of time and special effort.

JORDAN PUMP COMPANY
Kansas City, Mo.
Booth 197

Booth 197 will show and demonstrate 3½ pound motor driven pump Unit for Penicillin Mist, replacing need of heavy oxygen equipment. Showing and demonstrating pressure and vacuum pump Unit equipped with special flutter valve to positively control negative pressure within the head, permitting Mist to enter sinus cavities when open, using only negative pressure. This method mechanically creates mild massage within the head, eventually breaking crust which forms over sinus openings.

THE KELLEY-KOETT MANUFACTURING CO.
Covington, Ky.
Booths 145-146

The Keleket KXP Combination, finished in handsome Kelekote, is being shown. It is the most complete and compact Diagnostic X-Ray Unit, combining radiographic and fluoroscopic facilities plus facilities for any diagnostic requirements needed by the general practitioner, clinic and small hospital. See this moderate priced unit demonstrating the efficiency and pointing out its many features designed to simplify the required steps in radiographic and fluoroscopic procedures. A complete line of x-ray accessories and supplies are also available.

KIDDE MANUFACTURING CO., INC.
Bloomfield, N. J.
Booths 71-72

In Booth 71 the new KIDDE-Utero Tubal Insufflator with GASOMETER pressure control. Completely safe—gravity pressure control—simple operation—single control. Requires only small cartridge of carbon dioxide gas. Provides diagnostic and therapeutic use of carbon dioxide gas or opaque oil. Kymographic record of patency test. Also on display the KIDDE Dry Ice Apparatus used in treatment of superficial skin lesions. This apparatus is becoming increasingly popular because of its simplicity and superior cosmetic results obtained.

CHARLES B. KNOX GELATINE COMPANY
Johnstown, N.Y.
Booth 166

The exhibit of the Charles B. Knox Gelatine Company features the medical and dietary uses of Knox Plain Sparkling Gelatine. Attendants will gladly discuss the protein value of gelatine and explain how the production and laboratory control makes Knox Gelatine a quality product, helpful in special dietary cases. Literature, including dietaries and recipes, is free.

LAKESIDE LABORATORIES, INC.
Milwaukee, Wis.
Booth 179A

The Lakeside Exhibit will feature the mercurial diuretic, MERCUHYDRIN. Representatives will be on hand to describe the use of this modern diuretic in early and late cardiac decompensation and other conditions. This, as well as other Lakeside specialties which will be displayed, have created general interest and medical discussion this year.

LANTEEN MEDICAL LABORATORIES, INC.
Chicago, Ill.
Booth 128

Lanteen Medical Laboratories, Inc. extend a cordial invitation to visit Booth 128. Featured will be the well known Lanteen Flat Spring Diaphragm, and representatives will be pleased to discuss the new and improved diaphragm technic.

LEA & FEBIGER
Philadelphia, Pa.
Booth 83

Lea & Febiger invites you to stop and examine their selection of new books and new editions, including Ormsby and Montgomery—*Diseases of the Skin;* Gray—*Anatomy of the Human Body;* Frohman—*Brief Psychotherapy;* Partipilo—*Surgical Technic and Principles of Operative Surgery;* Herbut—*Surgical Pathology;* Spaeth—*Principles and Practice of Ophthalmic Surgery;* Krimsky—*Binocular Imbalance;* Kraines—*Therapy of the Neuroses and Psychoses;* Burch and Reaser—*Primer of Cardiology,* and many other books of practical help and guidance.

LEDERLE LABORATORIES DIVISION AMERICAN CYANAMID COMPANY
New York, N.Y.
Booths 120-121

You are cordially invited to visit our exhibit where you will find representatives who are prepared to give you the latest information on Lederle products.

LIEBEL-FLARSHEIM COMPANY
Cincinnati, O.
Booth 216

The Liebel-Flarsheim Company cordially invites you to stop for examination and demonstration of their latest model diathermy and Bovie electrosurgical equipment. Capable representatives will be on hand at all times to answer your questions about physical therapy and electrosurgical apparatus. We hope you will stop by so that we may become acquainted.

ELI LILLY AND COMPANY
Indianapolis, Ind.
Booths 123-124-125

Featured at the Lilly exhibit will be new therapeutic developments and a demonstration of the Blood Sugar Screening Test (Wilkerson-Heftmann Method). This new test takes only five minutes to perform, is accurate within 5 mg. per cent of true glucose value and requires but 0.1 cc. of

blood. No preparation, standardization, pipetting, titration, or distilled water is necessary. Your Lilly medical service representative cordially invites you to visit the Lilly exhibit.

J. B. LIPPINCOTT COMPANY
Philadelphia, Pa.
Booths 53-54

J. B. Lippincott Company presents an interesting and active exhibit of professional publishing. With the "pulse of practice" centering in an advisory editorial board of active clinicians who constantly review the field, current and coming trends in medicine and surgery are known continually. On the studied recommendations of these medical leaders, Lippincott Selected Professional Books are undertaken. It is upon their knowledge too, of the outstanding work being done in general practice, as well as specialties, that men making a very real contribution to medical progress are chosen to author the Lippincottt books.

LLOYD BROTHERS, PHARMACISTS, INC.
Cincinnati, O.
Booth 193

Lloyd Brothers will present a group of new specialty products derived largely from botanical sources. Each is a unique preparation, well established through clinical study, and prepared by the patented Lloyd extraction process. Essential hypertension, allergy, general congestion and biliary dysfunction are among the fields of treatment explored with Lloyd products.

M & R DIETETIC LABORATORIES, INC.
Columbus, O.
Booth 150

M & R Dietetic Laboratories, Inc. will display Similac, a food for infants deprived either partially or entirely of breast milk. Messrs. D. O. Cox, J. J. Quilligan, A. M. Huber, H. W. Sackett, E. M. Smith, L. A. MacDonald, and R. L. Wilson will appreciate the opportunity to discuss the merit and suggested application for both the normal and special feeding cases.

THE MACMILLAN COMPANY
New York, N.Y.
Booth 129

Psychiatry in a Troubled World, a new book by Dr. William C. Menninger of the Menninger Foundation, will be offered by Macmillan. "Yesterday's war" from the psychiatric standpoint and "today's challenge"—a plea for application of psychiatric measures to prevent perplexing problems—is discussed. *Glomerular Nephritis* (Macmillan), containing Dr. Thomas Addis' method of diagnosing and treating Bright's disease will interest the general practitioner.

THE MAICO COMPANY, INC.
Minneapolis, Minn.
Booth 201

The Maico Exhibit will feature Maico's electronic stethoscope—the Stethetron. With the selective amplification of this instrument, the physician can amplify the sounds he is particularly interested in and, at the same time, subdue the other body sounds. This is the first real advance in diagnosis by auscultation in one hundred years and it is well worth your time to see and try this instrument.

MALTBIE CHEMICAL COMPANY
Newark, N. J.
Booth 177

Selective oral therapy in hepato-biliary disease will be the main feature of the Maltbie exhibit. Trained representatives will be present to explain the applications of Cholan-DH and Cholanox as well as other Maltbie specialties. Special requests will receive immediate attention. All physicians and guests are cordially invited to attend.

THE MALTINE COMPANY
Morris Plains, N. J.
Booth 5

Learn about the newer MALTINE specialties in a few minutes. Representatives will be on hand with samples and literature describing recent MALTINE firsts—the first bulk laxative in tablet form—the first true amino acid tablet—the newer THROMBOPLASTIN diagnostic agent—the new rectal ointment containing natural mucin. PROLOID, TEDRAL and DEPANCOL will be featured also at the MALTINE exhibit.

F. MATTERN MANUFACTURING CO.
Chicago, Ill.
Booth 186

A visit to the Mattern Booth will enable you to personally examine one of Mattern's many well known modern X-Ray Units. The unit on display is a single tube, hand tilt table unit with Deluxe Push Button Control finished in a beautiful Ivory Finish. Your inspection is welcomed and further information will be available upon your visit to our booth.

McNEIL LABORATORIES, INC.
Philadelphia, Pa.
Booth 77

The new chemotherapeutic preparation—LIQUID MER-DIAZINE—is presented by means of displays which point out the factor of safety in use. Mer-Diazine combines sulfamerazine microcrystalline and sulfadiazine microcrystalline in the unusual Liquoid dosage form. Also on exhibit will be recent facts about Butisol Sodium—the "Intermediate Sedative-Hypnotic." Physicians are invited to discuss the unusual factors of these two new preparations with our representatives who will be in attendance.

MEAD JOHNSON & COMPANY
Evansville, Ind.
Booths 167-168

Amigen and Protolysate will be on display at the Mead Johnson Exhibit at your I.P.M.A. meeting. Mead Johnson has pioneered the amino acid field commercially; the products have been described in more than one hundred and forty articles in the medical literature; this year they are available. Trained representatives will be at the Mead Exhibit to discuss details of the new amino acid products. Shown also will be Dextri-Maltose, Pablum, Pabena, Oleum Percomorphum and the other Mead products used in Infant Nutrition. Protenum, a new high-protein product, will be displayed. Also Lonalac for low-sodium diets.

MEDICAL CASE HISTORY BUREAU
New York, N.Y.
Booth 60

An inexpensive case history method. A system which shows at a glance the case you want, how many calls you made and when, the patient's history, developments and treatments, as well as the financial status of each case. The

Medical Case History Bureau has specialized for many years in record forms for the doctor's office. Their well informed representatives will gladly demonstrate the Info-Dex System and discuss your office problems.

MEDICAL FILM GUILD
New York, N.Y.
Booths 183-184-185

Medical Film Guild, through MEDICAL FILMS THAT TEACH, presents a refresher course in fundamental medical problems. Each film subject is produced in the manner of a textbook, profusely illustrated, offering information comparable to that found in postgraduate courses as presented at our leading medical schools. These films review such subjects as Occupational Health Problems, Management of the Failing Heart, Hypothyroidism, Arterial Blood Pressure, The Major Neuralgias, A Clinic on Deafness, Cervicitis, Parkinson's Disease, Otitis Media in Pediatrics, Mastoiditis, Sinusitis, Trichomoniasis and Moniliasis, and many others.

MERCK & COMPANY, INC.
Rahway, N.J.
Booths 154-155

The Merck Exhibit is devoted to the important subject of streptomycin with emphasis on its role in the treatment of tuberculosis. X-rays taken before and after the use of streptomycin in patients with the following types of tuberculous lesions are on display: Patient A—Advanced caseocavernous tuberculosis in a diabetic; Patient B—Advanced pulmonary tuberculosis and tuberculous pyopneumothorax; Patient C—Advanced pulmonary and laryngeal tuberculosis; Patient D—Acute miliary pulmonary and ulcerative oropharyngeal tuberculosis. Another use of streptomycin referred to in the display is in the treatment of gonorrhea. Other Merck preparations on display will be Neo-Antergan—a remarkably efficient histamine antagonist of low toxicity; Vinethene—the inhalation anesthetic for short procedures; Crystalline Penicillin G Sodium, and Myochrysine for the treatment of active rheumatoid arthritis.

THE WM. S. MERRELL COMPANY
Cincinnati, O.
Booths 23-24

Mercodol, the new antitussive syrup containing the better cough-controlling narcotic, Mercodinone, will be featured by Merrell. Mercodinone, a better antitussive agent than either heroin or codeine, is notably free from the undesirable side effects of the older drugs. Mercodol also contains the bronchodilator, Nethamine, and the saline-expectorant, sodium citrate.

THE C. V. MOSBY COMPANY
St. Louis, Mo.
Booth 37

A cordial invitation is extended all physicians attending the Assembly of the I.P.M.A., to visit the C. V. Mosby Company display, where a wealth of new and timely medical literature will be available for examination. Some of the very new releases to be shown will include Crossen—*Operative Gynecology;* Pottenger—*Tuberculosis;* Gradwohl—*Clinical Laboratory Methods and Diagnosis;* Dunbar—*Synopsis of Psychosomatic Diagnosis and Treatment;* Watson—*Hernia,* and Willis—*Pathology of Tumors.*

V. MUELLER & COMPANY
Chicago, Ill.
Booths 28-29

Many of the most recent developments in instruments for modern surgical technics will be featured in the exhibit of V. Mueller & Company. The display will also include a broadly representative selection from the complete Mueller line of standard and special instruments and equipment for every field of surgical practice.

THE NATIONAL DRUG COMPANY
Philadelphia, Pa.
Booth 55

RESINAT, the resin antacid for the treatment of peptic and duodenal ulcers, will be the featured product at the booth of The National Drug Company. You are cordially invited to visit our booth where trained representatives will be available to explain the efficacy and discuss the therapeutic values of this new antacid. Other ethically promoted products manufactured by this company will be displayed and detailed.

WHITTIER LABORATORIES
DIVISION NUTRITION RESEARCH LABORATORIES
Chicago, Ill.
Booth 173

A friendly welcome awaits you at the Whittier Laboratories exhibit which features: ERTRON—Steroid Complex, Whittier, for the treatment of arthritis; BEZON—Whole vitamin B complex plus vitamin C; INFRON Pediatric—For rickets prophylaxis; PENDARVON—A palatable, balanced source of the essential amino acids and vitamins of the B complex; and LAURIUM—The effective hematinic for hypochromic or nutritional anemia.

ORTHO PHARMACEUTICAL CORPORATION
Raritan, N.J.
Booth 65

Ortho cordially invites you to visit Booth 65 where they will exhibit their gynecic specialties, including Ortho-Gynol and Ortho-Creme. Also on display will be newer products for the treatment of vaginal infections and other gynecologic and obstetric problems. Well trained representatives will be on hand to discuss these products with interested physicians.

ORTHOPEDIC FRAME COMPANY
Kalamazoo, Mich.
Booth 228

The Orthopedic Frame Company will feature the new Stryker Bone Saw. This electrically driven, oscillating type safety bone saw cuts bone efficiently with no danger to the patient or surgeon. Also displayed will be the proved Stryker Cast Cutter and the reliable Stryker Turning Frame with its latest improvements.

PARKE, DAVIS & COMPANY
Detroit, Mich.
Booths 95-96-97-98

The Parke, Davis & Company exhibit features ETAMON CHLORIDE which temporarily blocks the transmission of nerve impulses at the autonomic ganglia. Pharmacologic and physiologic effects on the vascular and gastrointestinal systems are shown. As the drug is indicated as a diagnostic or therapeutic agent, where sympathectomy may be of bene-

fit, the conditions wherein it has been used are portrayed. You are cordially invited to call at our Exhibit with the assurance your interest will be appreciated.

THE E. L. PATCH COMPANY
Boston, Mass.
Booths 68-69

The E. L. Patch Company exhibit will interest every physician because it will feature Glytheonate (Patch), the new theophylline sodium glycinate product for intensive theophylline therapy in the treatment of cardiac asthma and coronary occlusion. In addition, there will be exhibited other Patch products, including Kondremul, Gadoment, Trydecyl and Predaten. Patch representatives will be on hand to serve you.

PET MILK COMPANY
St. Louis, Mo.
Booths 86-87

An actual working model of a milk condensing plant in miniature will be exhibited by the Pet Milk Company. This exhibit offers an opportunity to obtain information about the production of Pet Milk, its use in infant feeding, and the time-saving Pet Milk services available to physicians. Miniature Pet Milk cans will be given to the physicians who visit the Pet Milk booth.

PHILIP MORRIS & CO. LTD., INC.
New York, N. Y.
Booth 137

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiologic effects of smoking.

PICKER X-RAY CORPORATION
New York, N. Y.
Booths 91-92

Picker X-Ray Corporation will display the SERIES "200" with Spot Film Device and the New Electronic V-7 Control providing Fully Automatic Selection of Technic. There will also be on display the new GYNOGRAPH for the diagnosis and treatment of female sterility.

PIONEER RUBBER COMPANY
Willard, O.
Booth 76

The Pioneer Rubber Company will feature the following: ROLLPRUF Surgical Gloves of Latex and Neoprene; QUIXAMS, the short glove for dressings and examinations; Obstetrical Gloves and Heavy Duty Utility Gloves.

PITMAN-MOORE COMPANY
Indianapolis, Ind.
Booths 47-48

The Pitman-Moore display will feature a number of products developed by the Company's research department, including Magmoid Sulfadiazine, a Council-Accepted dosage form of fluid sulfadiazine; Magmoid Sulco, a triple sulfonamide in fluid form; and the new Ultraviolet-Irradiation Killed Rabies Vaccine. Experts from the Pitman-Moore scientific staff will be on hand to answer technical questions.

PLASTISHIELD, INC.
Minneapolis, Minn.
Booth 214

PLASTISHIELDS, shaped plastic shields, represent a new technic for the ante and postpartum care of the breast and nipple and was inspired by the need for a technic which would attack the unfortunately high incidence of nursing difficulties arising from cracked, sore, bleeding nipples, and breast infections. The PLASTISHIELD technic is now an established routine in many hospitals throughout the United States and Canada. With this technic, time required of maternity nurses in assisting the nursing mother is greatly reduced. PLASTISHIELDS are used without any medication. Trained nurses will be available at our exhibit to explain this technic.

POLORIS COMPANY, INC.
Jersey City, N. J.
Booth 195

The Poloris Company's exhibit will provide the visiting members with literature and professional samples of Poloris Dental Poultice. Poloris is an ethically promoted local medicinal counterirritant widely prescribed by the dental profession for the relief of pain and soreness due to irritation of teeth and gums.

W. F. PRIOR COMPANY
Hagerstown, Md.
Booth 78

PROFESSIONAL EQUIPMENT COMPANY
Chicago, Ill.
Booths 139-140

The exhibit of the Professional Equipment Company will feature the new Vertical Fluoroscopy Attachment recently developed for the Profexray Table Combination Radiographic and Fluoroscopic Unit. This attachment synchronizes the travel of the screen and powerhead, both vertically and horizontally, with the patient standing or seated at the end of the table. Other Profexray Units which will be exhibited include the Vertical Combination, the Mobile and Portable Units.

RARE CHEMICALS, INC.
Harrison, N. J.
Booth 99

New preparations in Rare's exhibit include: (1) Terjolate, companion product to Acidolate and Dermolate, skin detergents. Terjolate is a soapless, hypoallergenic, nonirritating detergent for dishwashing and general household cleansing. (2) Dienestrol "Rare," well tolerated and economical estrogenic preparations, now also available in aqueous suspension form for injection. Other Rare products to be displayed are: Rare's male hormone preparations for oral, parenteral and sublingual use; Salysal, salicylate which requires no alkali, Progesterone "Rare" and Chorionic Gonadotropin "Rare."

REED & CARNRICK
Toronto, Ont., Canada
Booths 57-58

Meprane Dipropionate, an entirely new synthetic estrogen for oral administration, is presented. Impressive clinical studies, reported in a leading medical journal, add to the rapidly accumulating evidence of the clinical efficacy of this preparation. Estrogenic Substances, R & C (formerly Estrogenic Hormones, R & C), a highly potent, clinically dependable mixture of natural estrogens, is also presented. Estrogenic Substances, R & C, is one of the most widely used preparations of its kind. It is available in oil solution and in a sterile aqueous suspension for parenteral administration.

J. B. ROERIG AND COMPANY
Chicago, Ill.
Booth 147

Attending physicians are cordially invited to attend the exhibit of J. B. Roerig and Company. Members of the Professional Service Department will be on hand to explain in detail the several products which will be displayed. Three new products will be featured: Heptuna with Folic Acid, a combination of ferrous sulfate, essential vitamins and folic acid; Obron, a new di-calcium phosphate, iron and vitamin capsule; and Lactenz, a protein hydrolysate. Company representatives will welcome all inquiries and will be pleased to extend the courtesy of the Professional Service Department to all visitors.

RYSTAN COMPANY, INC.
Mount Vernon, N. Y.
Booth 63

CHLORESIUM Preparations contain the water-soluble derivatives of Chlorophyll "a" ($C_{55}H_{72}O_5N_4Mg$). They are natural, nontoxic biogenic healing agents indicated in the topical treatment of wounds, burns, ulcers, dermatoses, and similar lesions; also for treating acute and chronic inflammatory conditions of the upper respiratory tract and oral cavity. These cell-stimulating, biotherapeutic preparations also promptly deodorize malodorous conditions.

SANBORN COMPANY
Cambridge, Mass.
Booth 64

On exhibit will be three completely new developments in instruments for cardiac diagnosis and research: The Sanborn Electromanometer, for direct recording of blood pressures (venous and arterial), intracardiac and spinal pressures, etc.; the "Poly-Viso," a two-to-four channel recorder for electrocardiograms, blood pressures, sphygmogram, electrokymogram, ballistocardiogram and other phenomena; and the Sanborn Electrokymograph. Also on display will be the popular Sanborn instruments for clinical use: the Viso-Cardiette, the Instomatic Cardiette, and the new Sanborn Metabolism Tester—the Metabulator.

SANDOZ CHEMICAL WORKS, INC.
New York, N. Y.
Booths 25-26

Among recently released Sandoz Medicinal Specialties are: MESANTOIN (methyl-phenyl-ethyl-hydantoin), antiepileptic for the control or reduction in the frequency of epileptic seizures; Dihydroergotamine "Sandoz" (D.H.E.-45), the improved non-narcotic relief for migraine; Glysennid for constipation—contains the crystalline glycosides from senna leaves, Sennosides A and B; also displayed are Cedilanid, stable preparation of Lanatoside C, a crystalline glucoside from Digitalis Lanata, not present in purpurea; Ipesandrine Syrup for the relief of cough and bronchial disorders—containing the active alkaloids of Dover's Powder in pure form with ephedrine.

W. B. SAUNDERS COMPANY
Philadelphia, Pa.
Booths 42-43

This Company will exhibit their full line of medical books including Hyman's *Integrated Practice of Medicine*, Bockus' *Gastro-enterology*, Kinsey's *Sexual Behavior in the Human Male*, Sollmann's *Pharmacology*, Beckman's *Treatment*, Todd & Sanford's *Clinical Diagnosis by Laboratory Methods*, Christopher's *Minor Surgery*, DeGowin, Hardin & Alsever's *Blood Transfusion*, Snyder's *Obstetric Analgesia*, Long's *A B C's of Sulfonamide and Antibiotic Therapy*, Dowling's *Acute Bacterial Diseases*, Noyes' *Clinical Psychiatry*, Brams' *Treatment of Heart Disease*, A.M.A. *Interns Manual*, Thorner's *Psychiatry in General Practice*, Wechsler's *Clinical Neurology*, and many others.

SCHENLEY LABORATORIES, INC.
New York, N. Y.
Booth 127

The Schenley Laboratories' exhibit features standard penicillin products, Penicillin Vaginal Suppositories, Rutaminal, and Titralac. RUTAMINAL TABLETS are an exclusive Schenley specialty supplying rutin, aminophylline, and phenobarbital. TITRALAC, another Schenley specialty, is a particularly palatable antacid with a titration curve resembling that of milk. Well informed personnel in attendance.

SCHERING CORPORATION
Bloomfield, N. J.
Booths 188-189

Among the new pharmaceutical and hormone preparations developed in the Schering research laboratories, MICROPELLETS PROGYNON will be featured. This new potent form of the female sex hormone, alpha estradiol, provides maximum results at minimum cost to the patient. COMBISUL and COMBISUL LIQUID, the triple sulfonamide combinations which eliminate the dangers of sulfonamide renal damage will also be presented. TRIMETON, the completely new antihistaminic will highlight the exhibit. Schering Professional Service Representatives will be present to welcome you and will be happy to answer your inquiries concerning Schering's new products as well as their other hormone, x-ray diagnostic, chemotherapeutic, and pharmaceutical specialties.

JULIUS SCHMID, INC., GYNECOLOGICAL DIVISION
New York, N. Y.
Booths 113-114

Physicians may see how a prescription for the correct size RAMSES Prescription Packet #501 will supply the patient optimum protection with simplicity in use. Reproductions of roentgenographs and drawings in color show how the examining physician can satisfactorily fit the patient. Representatives will welcome questions regarding RAMSES Gynecological Products—every one Council Accepted. These are RAMSES Flexible Cushioned Diaphragm, RAMSES Diaphragm Introducer, RAMSES Vaginal Jelly, RAMSES Vaginal Applicator and RAMSES Fitting Rings.

SEAMLESS RUBBER COMPANY
New Haven, Conn.
Booth 204

The Seamless Rubber Company will display a new booth which will feature Seamless PRO-CAP, the new adhesive plaster which minimizes irritation and itching. PRO-CAP, the only adhesive plaster containing the fatty acid salts—zinc propionate and zinc caprylate. In the display will be six kodachromes showing actual samples of application of PRO-CAP and ordinary adhesive plaster. Seamless STANDARD SURGEONS' GLOVES will also be featured as will Seamless EVEREADY NURSER. Seamless line of medical rubber goods and surgical dressings will also be shown.

G. D. SEARLE & COMPANY
Chicago, Ill.
Booths 8-9-10

You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle Products of Research. Featured will be Ruphyllin, for abnormal capillary fragility, Hydryllin, new and effective antihistaminic, as well as such time-proved products as Searle Aminophyllin in all dosage forms, Metamucil, Ketochol, Floraquin, Kiophyllin, Diodoquin, Pavatrine and Pavatrine with Phenobarbital.

SHAMPAINE COMPANY
St. Louis, Mo.
Booths 229-230

On display at this booth will be the Perfection Major Operating Table, which features completely head-end controls, and ease of operation. Also on display will be a complete assembly of metal and hydraulic equipment for the physician's office, as well as furniture suitable for use in reception room. Trained representatives will be on duty at all times.

SHARP & DOHME, INC.
Philadelphia, Pa.
Booths 38-39-40-41

Sharp & Dohme extends a cordial welcome to all visitors. Products on exhibit include "Staticin" Caronamide, the new compound that permits smaller penicillin dosage and provides more effective blood levels; Blood Group Specific Substances A & B for conditioning group 0 blood to eliminate a potential source of transfusion reactions; "Delvinal" Sodium Vinbarbital, for the production of obstetric amnesia and analgesia; "Delcos" Granules, an exceptionally palatable protein agent; new antibiotic preparations including "Tyrozets" Antibiotic-Anesthetic Throat Lozenges, "Prothricin" Antibiotic Nasal Decongestant, and "Tyroderm" Tyrothricin Cream. "Sulfathalidine" and "Sulfasuxidine" complete the products on exhibit.

SIEBRANDT MANUFACTURING CO.
Kansas City, Mo.
Booth 219

The Siebrandt Mfg. Co. will display a number of new Instruments. They will show the new Improved Jackson Bone Clamp for reduction and alignment of fractures, especially of femurs. The outstanding feature of the Exhibit will be a Plate Holding Clamp, designed by Siebrandt. This Bone Clamp presents an entirely new approach in the technic of applying bone plates. The jaws are so designed that after applying them over the fragments and immobilizing the fracture, the Bone Plate is then easily inserted and held against bone surface by means of a set screw. They will also show a new Drill Guide which assures accurately centered holes, and the Removable Plaster Hitch set.

J. SKLAR MANUFACTURING CO.
Long Island City, New York, N.Y.
Booth 165

J. Sklar Manufacturing Co. this year presents a comprehensive display of Stainless Steel Surgical Instruments, many of which are new and have never before been displayed before an I.P.M.A. Convention. The new instruments were designed, developed and manufactured in cooperation with leading American Surgeons. The display also includes Sklar's full line of Suction and Pressure Apparatus, long known and recognized for perfect performance. Ask to see Sklar's Improved Schiotz Tonometer, and the popular Davidson's Pneumothorax Apparatus.

THE SMITH-DORSEY COMPANY
Lincoln, Nebr.
Booth 138

Injectable and oral preparations will be featured at The Smith-Dorsey exhibit. Al-Si-Cal Powder and Tablets, which are specifically designed for the ulcer patient will be shown. Teotine Tablets for chronic heart conditions will be on display, and Ilban Capsules for secondary anemias and general tonic purposes will also be exhibited. The injectable material will cover a wide range of Council Accepted items which will be of interest to all physicians engaged in internal medicine. The Dorsey representatives welcome all physicians to their booth each day of the meeting.

SMITH, KLINE & FRENCH LABORATORIES
Philadelphia, Pa.
Booths 170-171

"DEXEDRINE" SULFATE (Dextro-amphetamine sulfate, S.K.F.): "Dexedrine" therapy—now established as the treatment of choice in overweight—spares the patient the discouragement and irritability which ordinarily accompany adherence to reducing regimens. Because it successfully curbs appetite, "Dexedrine" makes it easy for the overweight patient to stop overeating. Thus it reduces weight safely—without the use (and risk) of such drugs as thyroid.

SPENCER, INCORPORATED
New Haven, Conn.
Booth 163

You are cordially invited to visit our exhibit of Spencer Individually Designed Supports for abdomen, back, and breasts. The Spencerflex, a light, comfortable, masculine-looking support for men, will be featured. This support improves posture, increases efficiency and helps prevent hernia. It is especially suited for postoperative wear. Another support displayed will be the Spencer Sacroiliac Corset, designed to limit movement of the sacroiliac joints to relieve pain caused by sacroiliac sprain. The Spencer Breast Form, which conceals disfigurement and restores normal figure lines for the mastectomy patient, will also be shown.

E. R. SQUIBB & SONS
New York, N.Y.
Booths 51-52

E. R. Squibb & Sons will feature Crysticillin, the new procaine penicillin G for aqueous injection with other antibiotic agents.

R. J. STRASENBURGH CO.
Rochester, N.Y.
Booth 203

The R. J. Strasenburgh Company exhibit will feature the results of research and investigation in three fields—Cardiology, Gastroenterology and Dermatology.

STRONG COBB AND COMPANY, INC.
Cleveland, O.
Booth 182A

New scientific automatic ampule injector, the AMPIN, for subcutaneous injection. For speedy injection of emergency drugs. Entirely eliminates usual hypodermic procedure. Saves doctor's time, is easy and convenient to use. Nothing to dissolve, sterilize or assemble. AMPINS are completely sterile, tamper-proof and low-cost. See AMPINS demonstrated and try them for yourself.

SUTLIFF & CASE CO., INC.
Peoria, Ill.
Booths 44-45

Sutliff & Case Co., Inc. is always happy to exhibit at the I.P.M.A. Meetings. We invite members of the association to visit us. Specializing in medications for the treatment of arterial hypertension we will display several of our products of Potassium Thiocyanates including the newer products using Rutin in combinations. Other interesting pharmaceuticals will also be on display.

TAMPAX INCORPORATED
New York, N.Y.
Booth 226

Patients are constantly demanding authoritative information and up-to-date instruction in the use of the Tampax method of menstrual protection in three absorbencies. Tampax educational consultants will welcome the opportunity to discuss with you the many hygienic features of this leading intravaginal tampon.

THE TARBONIS COMPANY
Cleveland, O.
Booth 194

TARBONIS presents a unique tar extract 5 per cent (special process), in a clean patient-appreciated form, odorless, greaseless, nonstaining. Its antipruritic, decongestant, remedial properties are of established value in every form of eczema, psoriasis, folliculitis, seborrheic dermatitis, industrial dermatoses, and in a number of other, especially pruritic, disorders. SUL-TARBONIS (TARBONIS with 5 per cent sulfathiazole) provides a combination treatment (see indications above) when infection is a complicating factor.

THE TECHNICON COMPANY
New York, N.Y.
Booths 152-153

The Technicon exhibit will feature the use of both the AUTOTECHNICON for automatic processing of tissues for microscopic examination, and the SCOPICON, a device for the demonstration of microscopic pathology. Microscopic slides will actually be stained by means of AUTOTECHNICON during the course of the meeting. Also on exhibit will be the "Lab-aid" slide filing system, the Technicon Automatic Pipette Washer and the Technicon Constant Temperature Water Bath for spreading paraffin sections.

CHARLES C THOMAS
Springfield, Ill.
Booths 181-182

Charles C Thomas, Publisher's massive exhibit of books will be conveniently arranged for your browsing pleasure. These new titles will be featured: Klemme—*Hospital Care of Neurosurgical Patients;* Hepler—*Clinical Laboratory Diagnosis;* Myers and McKinlay—*The Chest and the Heart;* Overholt and Langer—*The Technique of Pulmonary Resection,* and Padgett and Stephenson—*Plastic and Reconstructive Surgery.* A host of new monographs in the AMERICAN LECTURE SERIES will be on display.

U. S. STANDARD PRODUCTS CO.
Woodworth, Wis.
Booth 70

We invite you to visit our booth at the Interstate Postgraduate Medical convention in Cleveland. Sales and technical representatives shall be in attendance to furnish you with information on our products.

U. S. VITAMIN CORPORATION
New York, N.Y.
Booth 116

Full color illustrated brochure "Diagnosing Vitamin Deficiencies" together with professional samples and literature on VI-SYNERAL, POLY-B, VI-LITRON, HYPERVITAM, LIPO-HEPLEX, DALSOL, DESIVER, AMIPROTE, RUTIN-RUTASCORB, METHISCHOL, TRI-SULFANYL and others.

THE UNIVERSITY OF CHICAGO PRESS
Chicago, Ill.
Booth 46

Distinguished for authoritative content and excellence of editorial work, the books of UNIVERSITY PRESSES claim enviable rank among nonfiction and technical publications. The Association of American University Presses has arranged a cooperative exhibit for your enjoyment at this meeting—and to give you an opportunity to purchase some of these important titles for your library.

THE UPJOHN COMPANY
Kalamazoo, Mich.
Booths 157-158-159

ADRENAL CORTEX AND RESISTANCE—The central panel of the exhibit symbolizes that man's resistance to stress is being increased by science. The other panels show the effect on the adrenals of various stresses—infection, exercise, surgery, and anoxia. The final panel shows the relative potency of adrenal cortex and lipo-adrenal cortex sterile solutions.

VAN PELT AND BROWN, INC.
Richmond, Va.
Booth 180

Of special interest is Vifoliron, the new and effective blood builder containing ferrous gluconate, ferrous sulfate, liver concentrate, folic acid, and supplementary vitamins. Barbidonna, sedative and spasmolytic preparation, is also being featured. This preparation is now available both in tablet and elixir forms. Inquiries are cordially invited concerning these and our other ethical pharmaceuticals.

VAPONEFRIN COMPANY
Upper Darby, Pa.
Booth 191

The Vaponefrin exhibit features devices and materials for use in Aerosol or Inhalational Therapy. This comprises the Vaponefrin Nebulizer and solution. The PNP unit (positive negative pressure) for sinusitis, the Vapocillin unit for the treatment of serious respiratory diseases of the chest and lungs and the new Vaponefrin Aerosol Motor Unit for production of low compression aerosols. Vaponefrin is an especially purified racemic epinephrine and is used alone as a bronchodilator or in combination with antibiotics for aerosol therapy.

VARICK PHARMACAL COMPANY, INC.
New York, N.Y.
Booths 31-32

Varick Pharmacal Company, manufacturers of DIGITALINE NATIVELLE, are proud to present an interesting and informative exhibit on heart disease. Featured will be DIGITALINE NATIVELLE, crystalline digitoxin, the chief cardioactive glycoside of digitalis purpurea. Physicians are cordially invited to listen via individual headsets to our stethoscopic reproductions of normal and abnormal heart sounds, and to view our presentation of enlarged full-color kodachromes of many gross cardiac specimens and photomicrographs of

cardiac pathology. Samples and literature of DIGITALINE NATIVELLE will be available.

WALLACE & TIERNAN PRODUCTS, INC.
Belleville, N. J.
Booth 176

Visiting physicians are cordially invited to visit the Wallace & Tiernan exhibit. In addition to the widely used prescription specialties—Azochloramid, Monomestrol, and Desenex—we will display Sotradecol, the new Council Accepted sclerosing agent for the injection treatment of varicose veins.

WILLIAM R. WARNER & COMPANY
New York, N. Y.
Booth 85

William R. Warner & Company will feature Heparin/Pitkin Menstruum, the latest in anticoagulant therapy. Other important preparations—Intracillin, a penicillin in oil without wax which exhibits prolonged and effective blood levels; Gelu-cillin "PR," a procaine penicillin; Diatrin, a new antihistaminic of extremely low toxicity, and other well-known Warner products will also be displayed.

WESTWOOD PHARMACAL CORPORATION
Buffalo, N. Y.
Booth 33

Presents WESTSAL, the newly developed and *only* salt substitute that tastes *exactly* like salt. Now possible to prescribe low-salt diets for cardiac, hypertensive and pregnancy toxemia patients without sacrificing palatability of meals. WESTSAL contains no sodium and can be used in cooking, baking and on the table without loss of flavor. There is no patient resistance to food seasoned with WESTSAL. Please stop at our booth for full particulars and a taste.

WHITE LABORATORIES, INC.
Newark, N. J.
Booth 1

White's Dienestrol Tablets and Dienestrol Suspension (Council Accepted)—a new orally effective synthetic estrogen is featured. Complete information and literature are available regarding the advantages of Dienestrol's high biologic activity, excellent patient-tolerance and economy. Other products of White Laboratories, Inc. are on display and White's Medical Service Representatives in attendance will be pleased to supply any further information requested.

WILLIAMS & WILKINS COMPANY
Baltimore, Md.
Booth 178

The Williams & Wilkins Company will exhibit about 30 new books and new editions which have been published in 1948. In addition, their complete group of medical periodicals will be displayed. This includes *Excerpta Medica,* the series of 15 abstract journals covering the world's medical literature classified according to subject matter.

WINTHROP-STEARNS INC.
New York, N. Y.
Booths 93-94

Winthrop-Stearns Inc.—new owner of the businesses formerly conducted by Winthrop Chemical Co. and Frederick Stearns & Co.—features transparencies of beautiful medical art by Mr. Leon Schlossberg. This well-known artist was a pupil and associate of the late Max Broedel, the dean of medical artists and the first American professor of medical art (at Johns Hopkins University). His work reflects the impressive style of Broedel to which has been added a unique transparency technic. Also featured will be the latest therapeutic contributions made by this firm.

MAX WOCHER & SON COMPANY
Cincinnati, O.
Booths 15-16-17

The firm of Wocher has a slogan that goes: "Your grandfather's instruments came from Wocher's." This 111-year-old firm has developed many new and interesting instruments for display at the I.P.M.A. meeting. In dealing with Wocher you have the opportunity of buying direct from the manufacturer of both instruments and a complete line of physicians' and hospital furniture. The Wocher organization, despite its century-old background, has a progressive and service-conscious attitude.

WYETH INCORPORATED
Philadelphia, Pa.
Booths 3-4

Wyeth Incorporated will feature Meonine[R] and Amphojel[R]. Meonine (dl-Methionine), the most efficient single agent for treatment of liver damage, is particularly effective in early portal cirrhosis and related conditions. Amphojel (Alumina Gel) is standard treatment for peptic ulcer. It is prepared in seven forms to meet individual needs. The Wyeth representatives in attendance will be glad to answer questions on these and other products. They will also have an ample supply of samples and literature.

YEAR BOOK PUBLISHERS, INC.
Chicago, Ill.
Booth 118

The Year Book Publishers are happy to present to the Assembly books written primarily for the man in practice who has finished his training but wishes to keep abreast of latest medical advancements. Recent Year Books, General Practice Manuals, Monographs and Texts will be shown; new and of especial interest will be *Methods in Medical Research,* Wright's *Vascular Diseases in Clinical Practice* and Young's *The Skull, Sinuses and Mastoids,* completing the Series of Roentgen Diagnosis.

F. E. YOUNG & CO.
Chicago, Ill.
Booth 196

F. E. Young & Company will exhibit Young's rectal dilators. These are a set of graduated sized dilators used in the treatment of constipation, hemorrhoids, rectal neurosis, etc. They are used by surgeons for postoperative anal contraction. The obstetrician and gynecologist find them a valuable aid in perineal repair. F. E. Young & Company will also display Sulf-A-Test, a ten second test for all sulfa drugs and Young's PSP Spot Test for kidney function study.

ZIMMER MANUFACTURING COMPANY
Warsaw, Ind.
Booth 221

Zimmer Manufacturing Company will exhibit a complete line of Fracture Equipment, including the latest developments in Bone Plating Instruments. New items on display for your approval will be: the BISHOP LOW SPEED OSCILLATING ATTACHMENTS FOR YOUR LUCK BONE SAW, A COMPLETE NEW SET OF MYERDING BONE CHISELS-GOUGES-OSTEOTOMES in one piece stainless steel, MOREIRA STUD-BOLT, ADJUSTABLE BONE CLAMPS, INTRAMEDULLARY PINS & INSTRUMENTS, THREADED WIRES & PINS, NEW TYPE SMITH-PETERSON NAIL & PLATE, RUBBER CUSHION WALKING HEELS, NEW WIRE & PIN CUTTER, STAPLE SET, and THE VINKE SKULL TRACTOR.

New Drugs and Instruments

Information published in this department has been supplied by the manufacturers of the products described.

HEARING AID BATTERY

PURPOSE: A new re-chargeable hearing aid battery.

DESCRIPTION: A wet-cell A battery offering up to eighteen hours of heavy service with one charge. The battery charges in six hours to full strength, using miniature charger plugged into regular AC outlet. It weighs only 5 ounces, is fully contained in a plastic case measuring $1\frac{1}{4}''$ by $\frac{7}{8}''$ by $3\frac{3}{4}''$, and fits any two unit hearing aid.

PRODUCER: Kenneth B. Butler & Associates, Mendota, Ill.

ENTEROGASTRONE

PURPOSE: For inhibiting gastric secretion and protecting the gastric and duodenal mucosa from ulceration.

COMPOSITION: A sterile lyophilized extract of the first six feet of intestine distal to the pylorus of freshly slaughtered hogs prepared according to the method of Ivy, *et al.*

DOSAGE AND ADMINISTRATION: Best results have been obtained by the daily intramuscular injection of 200 mg. of enterogastrone dissolved in 4 or 5 cc. of solvent. Injections should be continued for a period of at least one year.

CAUTION: The preparation is not entirely free from vasodepressor effect, and if given intravenously will produce weakness and flushing of the face.

HOW SUPPLIED: Enterogastrone Hydrochloride (Armour) is supplied in a 10 cc. size rubber stoppered vial containing 200 mg. of lyophilized enterogastrone, together with a 5 cc. ampule solvent.

PRODUCER: The Armour Laboratories, Chicago 9, Ill.

PRENATAL CAPSULES LEDERLE

PURPOSE: To supplement the diet with vitamins and minerals during pregnancy and lactation.

COMPOSITION: Each capsule contains:

Vitamin A	2,000 U.S.P. units
Vitamin D	400 U.S.P. units
Thiamine hydrochloride (B_1)	2 mg.
Riboflavin (B_2)	2 mg.
Ascorbic acid (C)	35 mg.
Nicotinamide	7 mg.
FOLVITE* folic acid	1 mg.
Calcium (in $CaHPO_4$)	250 mg.
Phosphorus (in $CaHPO_4$)	190 mg.
Iron (in exsiccated $FeSO_4$)	6 mg.
Manganese (in $MnSO_4$)	0.12 mg.

*Reg. U. S. Pat. Office.

DOSAGE AND ADMINISTRATION: Three Prenatal Capsules Lederle daily supply the following percentages of adult minimum daily requirements: vitamin A 150 per cent, vitamin D 300 per cent, thiamine HCl (B_1) 600 per cent, riboflavin (B_2) 300 per cent, ascorbic acid (C) 350 per cent, calcium 100 per cent, phosphorus 76 per cent, and iron 180 per cent. In pregnancy and lactation, 50 per cent of the calcium and 38 per cent of the phosphorus minimum daily requirements are supplied by three capsules daily.

HOW SUPPLIED: Packages of 100 capsules.

PRODUCER: Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.

PENICILLIN CALCIUM TABLETS

PURPOSE: Treatment of pneumococcic, streptococcic, staphylococcic, and gonococcic infections.

COMPOSITION: Each tablet contains 100,000 units of the calcium salt of penicillin, buffered with 0.3 gm. of sodium citrate.

CAUTIONS: In syphilis, meningitis, endocarditis, and peritonitis, penicillin should be adminstered parenterally. In acute septicemia and bacteremia, parenteral administration of penicillin should be continued until negative blood cultures are obtained.

DOSAGE AND ADMINISTRATION: Gonorrhea: 1 tablet every three hours for 6 doses per day for one to two days. In acute pneumococcic, streptococcic, and staphylococcic infections, a minimum of 20,000 to 40,000 units of penicillin should be given parenterally every three hours. After the acute phase has been controlled, the treatment may be continued with one Penicillin Calcium Tablet every three hours for at least forty-eight hours after the temperature has returned to normal.

HOW SUPPLIED: In boxes of 12 tablets, each tablet individually hermetically sealed in metal foil. Penicillin Calcium Tablets do not require refrigeration.

PRODUCER: Schering Corporation, Bloomfield, N. J.

Leaves from a Doctor's Diary

By Maurice Chideckel

September 1 . . . It was a night to be remembered, as if a host of enigmas conspired to deprive me of my needed rest. 1:30 A.M. The psychic hiccuping of actress Jeanette disturbed the neighborhood. Between attacks she informed me of the cause of her unhappiness. The manager threatens to take her role away, because she does not put enough life in her death scene. 2:30 A.M. Mrs. Dougherty was seized with hysterical convulsions. Her brother, so her husband told me, is to be tried in criminal court for robbery of a bank. "They cannot put him in jail," she screamed. "That poor boy could not have done it. I am asking you, how could he have robbed a bank in Baltimore at twelve noon, when at that very hour he was robbing a bank in Washington?"

4:00 A.M. A full fledged case of hysteria in Mrs. Colbert. Her husband assured her that he would leave her if she does not stop playing cards nightly. "And I'll miss him so," she spoke weepingly. 5:00 A.M. and all is still not well. Rooted in the obsession that his good wife is unfaithful, he chose that hour to seek advice on how to learn of her unfaithfulness or to be assured of her fidelity. He has an affair, comes home any hour and she does not seem to care where he has been. John Cullins, by the way, is not the only man who believes in a double standard of morality. The gander may; the goose must not. Then came the dawn, and the voice of grocer Balgerman, who opens his store daily at 4 A.M. "You know what diarrhea is? Well, I got it. Terribly constipated. What's that? You want to sleep? You doctors certainly got it good. I wish I was a doctor."

* * *

September 2 . . . Dr. Martin Craven is not easy to depict; nor is the cast of his ideas easily grasped. To himself he is a person of infinite importance. Ten doctors, myself included, were invited to his house. It was no energetic dispute, for no one disputed. He alone talked. The prose he read from a paper was lusterless and imageless, and also senseless. Poetical Colleague Balder called his language a pale verbal landscape, desolate and foul smelling. Dr. Craven praised effusively all those who fight for socialized medicine. The overemphasized praise not only became heavy and monotonous, but nauseating. Then he began to condemn all opponents.

What a relief when his wife came in. We all rose and went to the door. She seemed to be drenched to the bone. "It's raining hard," she said, without looking at any one of us. Dr. Craven glanced through the window and remarked: "A regular deluge." She asked: "A what?" He answered: "A deluge. Don't you know what that is? Didn't you read about Noah and the Ark and the animals he gathered. . . ." She interrupted angrily: "You know that I didn't have a chance to read a paper for a week. How do you expect me to know what's going on in the world?" As they began to argue, we sneaked out one by one, and so ended the important gathering to save humanity.

September 3 . . . Dr. Brace, too, never lacks a solution for the constantly recurring problems, and he too is not niggardly in the matter of faults. Once an idea dawns upon him, it gains unforced momentum, stiffens his will and the determination becomes unalterable. But the astute jobs he undertakes are never done and all his efforts end in nothing at all. In a few weeks there will be a scientific meeting, and we shall be honored by out of town medicos. We must have, the doctor says, an endless variety of clinical material for demonstration.

To each member of the clinic he assigned the task of getting the stuff. To me was assigned (I am quoting): "Six cases of breast malignancy that were benefited by testosterone, be it propionate, acetate, crystalline pellets, or methyl. Each patient to be allowed to tell her story. At least three cases of dysmenorrhea due to sexual suppression, that were cured by having the suppressed libido restored. Here, too, the girls must open up and tell all to those assembled.

"We must, we absolutely must, have a skin grafting demonstration, and we must prove that prepuces after circumcision make excellent grafts. Hence you are to bring nine fresh prepuces just cut off. We need six small ones and three from adults. You must not fail. Oh, yes, bring a badly burned case that needs grafting. No less than eight cases of migraine that shall furnish incontestable evidence of tension. We are to claim that migraine is a tension phenomenon. Tension, understand? Cerebral, vascular, sexual, as in my wife, and otherwise, but tension.

"Six cases of diffuse goiter and hyperthyroidism that were benefited by my favorite single therapeutic agent, radioactive iodine. For the sexologists bring two cases to show them that skipped menstrual periods increase sexual desire." End quote. I always thought that increased sexual desire is what

Look at
The Post-Operative Picture

*ALCOHOL IN VITADEX-B

It's surprising—the sense of confidence and well-being patients experience—how relaxed and calm they are—when you use Alcohol in Vitadex-B for post-operative sedation.

Opiates and other sedatives may usually be eliminated entirely—along with their troublesome side effects. Patients rest easier *—are undisturbed by the nausea, vomiting, gas pains and constipation* associated with use of morphine. Also note these other advantages of intravenous alcohol over morphine:

- more prolonged action
- increased respiration
- diuretic action
- vasodilatation without significant change in blood pressure
- no danger of addiction

Besides the analgesic and caloric advantages of alcohol, this solution also supplies the nutritive value of dextrose—plus generous amounts of the B vitamins necessary for alcohol and dextrose metabolism.

There's no doubt about it—with Alcohol in Vitadex-B, patients rest easier; so do you.

Cutter Laboratories
Berkeley 1, California

Supplied in 1000 cc. Cutter Saftiflasks —ready for immediate intravenous administration.
CUTTER
Fine Biologicals and Pharmaceutical Specialties

causes the lady to skip. She skips because she desired it. In the afternoon the doctor called to inform me that he has no material for psychiatric demonstration. How about himself?

Radioactive iodine in hyperthyroidism. Young Dr. Collins administered it to Mrs. Hanline, without finding out if she was pregnant. After all, Mrs. Hanline is a widow, and widows are not supposed to be "with child." The lady aborted. And she is so grateful. . . .

* * *

September 8 . . . Do you want additional proof of the emotional factors in allergy? If you are not convinced yet that dermatologic conditions are initiated by psychologic forces, and that situations engendering emotional responses bring about all forms of disturbances, including asthma, come right over and see (1) *Mrs. Gould in the oxygen tent. Her husband asked her to stop singing because the neighbors think she is screaming for help. (I heard her sing and was of the same opinion.)* (2) Mr. and Mrs. Burke. The Mrs. with pruritis vulvae and the Mr. with pruritis ani. While he scratches the rear, she digs into the front. She saw him with the stenographer in his car, "and the way he looked at her," quoting her, "she is more than a stenographer to him." She threatens to leave him "flat" and he has a reputation to maintain. (3) *Angioneurotic edema in Ab Colton. His wife gave birth to a girl. He was sure of a boy.* (4) And here wheezes Calvin Bruce. His wife, young and attractive, a supervisor in a shop owned by a bachelor, received a mink coat, a present for her being prompt in reporting for work, and he said between wheezes, "Mink coats are not given away for promptness." (5) *There is colleague Landon, whose marital unity is threatened with disintegration. Both temperamental and both hasty, hence mismated. Today he told me in her presence that he saw two cases with profound mental changes after the administration of insulin. The two patients were actually reduced to the level of imbecility. "Any time I want an idiot, all I need is to inject him or her with huge doses of insulin."*

It was her turn to talk. "One idiot in this house is enough. Look at him. You are facing the mirror." Then she added: "I only married you to find out how really idiotic you are." He smiled mordantly: "The very fact that I asked you to marry me should have been sufficient proof that I am abnormal." She told him that after all they are not the Siamese twins, and that they stand better divided than united. He has now been scratching himself for hours. He refuses to take antihistaminic drugs.

* * *

September 13 . . . Two tragic events in one day. And maybe they were not tragic after all. John Wells flouted all moral responsibility. His conscience has been rendered insensitive by an extramarital affair. His delicate wife met the other woman, a huge masculine female, and pleaded with her to leave her husband alone. She was cruelly kicked in the abdomen and thrown down a flight of steps. The little woman was admitted to the hospital with a hepatorenal syndrome, and she was in complete shock.

Autotransfusion was done by the aspirated blood and when she regained consciousness, she sent for her husband and asked him that when she dies not to marry that woman, but marry her cousin. "Die first, and then I'll see," he murmured. All of a sudden he saw through the window the large object of his adoration walking arm in arm with another man. Enraged he began to run across the street, but he never reached that intersection. His lifeless body lay under the wheels of a bus. The patient recovered from a paralytic ileus, the only complication, and she is to marry his cousin.

And there was Bert Cox, a pious man, a good man, who delved daily into the recesses of the moral conscience of our times. His wife was to have intermittent heparinization before a major operation for prophylactic purposes. It was explained to him what is meant by pulmonary embolism, that it occurs in 50 per cent, and that the mortality rate is 20 per cent. He shook his head negatively. The price of heparin is too high. "The trouble with you doctors is that neither of you believes in God. You should know that if her number is not called she won't go. So don't tell me about danger, mortality and all that nonsense." Strangely enough, his number was called the same day, and it was due to a pulmonary embolus. The wife is doing well. Number calling. I know a religious man who is afraid to take a ride in an airplane, because they may call the number of the pilot.

* * *

September 20 . . . I once read of a railroad watchman. On his day off he would don his Sunday clothes and spend the day with the man who was taking his place. Once a week, I go out to talk shop with someone, for relaxation. This time I went to the house of colleague Roden, and he did the talking: "I don't like Nicholson. Never did. He is too pompous, too vociferous, too noisy, too sure and too hasty." He stopped. Evidently he ran out of "toos." He talked again: "Nicholson diagnosed silicosis by one fluoroscopic examination, and he told the patient of 35 that he is going

to die shortly. His assurance was accompanied by insults. Doesn't he know that even with a series of roentgenograms the shadows quite often are not sufficiently characteristic to diagnose the case with definite finality? And why these abuses? Why can't all doctors cultivate that courteous quality that attracts, that inspires the patient with confidence? Why not have intelligence, humor, and with our sentences subtle and friendly? Is there any excuse for abuse?"

The telephone rang. The doctor's face became red. "Goddam it. I told you never to call me at this hour. No. I can do nothing for your wife. Do you hear me? Nothing. No. Nobody can. Now stop bothering me." Down came the receiver. "Hmm. That jackass. He expected me to cure a mediastinal carcinoma." His highly cultured wife stood in the doorway. "I heard you," she said, and regarded him hatefully. "So this is the man who keeps on saying that the absence of the quality of mercy dehumanizes. How could you talk to a man so crushed. . . ." He bent over and whispered, "Come, let's go, before she becomes historical. No, I don't mean hysterical. I do mean historical. She'll soon begin to recount the wrongs I have committed for the last twenty years. Come." He pulled me outside and soon we were heading for a night club, my first experience.

I viewed the huge, brilliantly lighted room and the people in it. A world all by itself with hardly any individual variations. Hilarity reigned. People talked, and drank, and ate and laughed, and all succumbed to the magic of the hour. There were no signs of nostalgia, no withdrawing into reflection, no thoughts about a former life, or of the present life. It was withal a dancing, laughing, happy world. A stocky young woman, not bad to look at, whose full bosom was more revealed than concealed came and smoothed my head. I didn't mind it at all. She said I looked very handsome after three drinks. Yes, she knew I didn't drink. But *she* did. Then she passed to the next table. When I came home I concluded that these indulgences, seeing people under such conditions actually broadens man's mental horizon. "I'll go there again," I said aloud to myself. I had to open my big mouth. "Where?" came the stern query from her. "What? You went to a night club without me, without even telling me?"

And it was a night to be remembered.

there's a better antitussive narcotic in

New, Pleasant Tasting

MERCODOL®

ANTITUSSIVE SYRUP

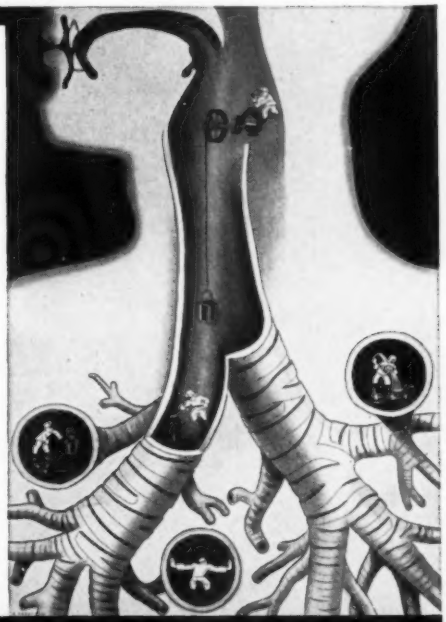
featuring **MERCODINONE** ® an improved, more potent narcotic — superior in cough control to codeine and heroin, but notably free from nausea, constipation or retention of sputum.

plus **NETHAMINE** ® a bronchodilator to relax plugged bronchioles.

SODIUM CITRATE a better expectorant to liquefy secretions.

EXCELLENT TASTE • WIDELY COMPATIBLE

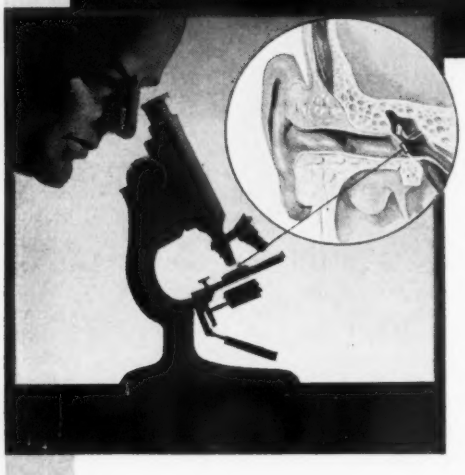
Dosage: Adults, 1 teaspoonful; children ¼ to 1 teaspoonful. Repeat every 3 hours and as needed at night. *An Exempt Narcotic,* available at prescription and hospital pharmacies.



MERRELL 1828

THE WM. S. MERRELL COMPANY · CINCINNATI, U.S.A.

PIONEERS in Research . . . and Leadership thru the years in combating



DOHO in realizing the need for a potent, topical, well tolerated ear medication, yet mindful that no one formula could be suitable for all conditions . . . devoted every facility and scientific resource to the development and perfection of AURALGAN and OTOSMO-SAN. Each has its sphere of usefulness . . . each has been tested and clinically proven in many thousands of cases. *Reprints and substantiating data sent on request.*

EACH A SPECIFIC . . . both effective!

Auralgan
IN ACUTE OTITIS MEDIA

is a scientifically prepared, completely water-free Glycerol (DOHO) having the highest specific gravity obtainable, containing antipyrine and benzocaine . . . which by its potent decongestant, dehydrating and analgesic action provides effective relief of pain and inflammation.

O-TOS-MO-SAN
IN CHRONIC SUPPURATIVE OTITIS MEDIA, FURUNCULOSIS AND AURAL DERMATITIS

is not just a mere mixture, but a scientifically potent chemical combination of Sulfathiazole and Urea in AURALGAN Glycerol (DOHO) base . . . which exerts a powerful solvent action on protein matter, liquefies and dissolves exuberant granulation tissue, cleanses and deodorizes, and tends to exhilarate normal tissue healing in the effective control of chronic suppurative otitis media.

Literature and samples on request

THE DOHO CHEMICAL CORPORATION
New York 13, N. Y. • Montreal • London